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AIR QUALITY ASSESSMENT MODEL (AQAM) DATA REDUCTION AND OPERATIO--ETC(U)
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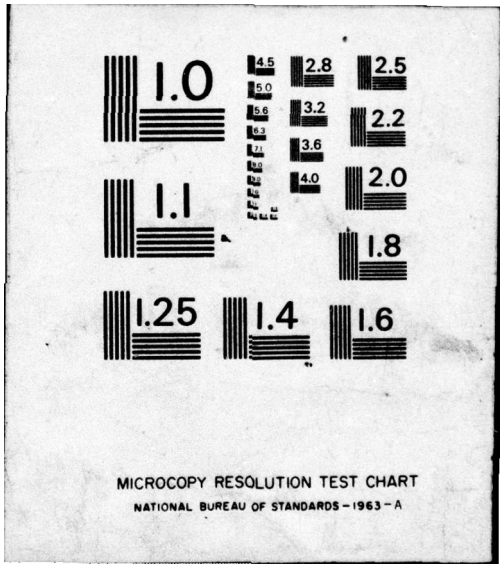
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AIR QUALITY ASSESSMENT MODEL (AQAM) DATA REDUCTION AND OPERATIONS GUIDE

October 1976

Final Report

Approved for public release; distribution unlimited.

AIR FORCE WEAPONS LABORATORY
Air Force Systems Command
Kirtland Air Force Base, NM 87117

AFWL-TR-75-307

This final report was prepared for the Air Force Weapons Laboratory, Kirtland AFB, NM, under Job Order 21035A20. Mr. David F. Menicucci (ADS) was the Laboratory Project Officer-in-Charge.

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This technical report has been reviewed and is approved for publication.

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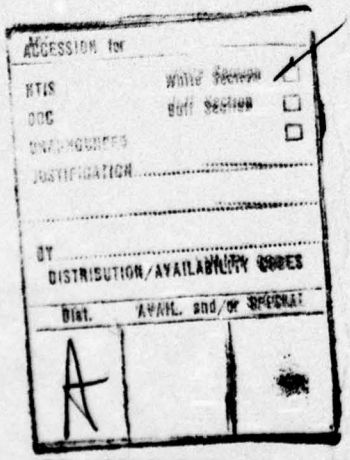

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The USAF, in a contractual effort with Argonne National Laboratories (ANL), has developed a computerized Air Quality Assessment Model (AQAM). This model is used to assess the impact of USAF operations on the air quality. The original operator's guide, AFWL-TR-74-54, was written by ANL to describe the methods of operating, coding, and punching computer data decks to be input to the AQAM. This present guide was prepared by the Air Force and supersedes all editions of the previous report; this guide also reflects the refinements made during the first year of applying the AQAM.

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SUMMARY

The USAF, in a contractual effort with Argonne National Laboratories (ANL), has developed a computerized Air Quality Assessment Model (AQAM). This model is used to assess the impact of USAF operations on the air quality. The original operator's guide, AFWL-TR-74-54, was written by ANL to describe the methods of operating, coding, and punching computer data decks to be input to the AQAM.

This present guide was prepared by the Air Force and supersedes all editions of the previous report; this guide also reflects the refinements made during the first year of applying the AQAM.

PREFACE

This user's guide is closely related to two other Air Force Weapons Laboratory (AFWL) technical reports.

A013 773 1. AFWL-TR-75-220, Air Quality Assessment Model (AQAM) Field Data Collection Guide.

A006 807 2. AFWL-TR-74-304, A Generalized Air Quality Assessment Model for Air Force Operations.

AFWL-TR-75-220 defines the methods for collecting and reducing emission input data. The mathematical theory of the model is described in AFWL-TR-74-304. This report, AFWL-TR-75-307, describes the operation of the AQAM and a method for punching the reduced emission input data into a formatted computer card deck for input to the model. These three reports encompas all necessary information for understanding and utilizing the AQAM.

The following are other related published or planned reports:

A001 826 AFWL-TR-74-279 outlines the techniques used to develop takeoff length equations and climbout angles for most USAF aircraft.

A006 239 AFWL-TR-74-303 presents aircraft pollution emission data and landing and takeoff cycle times for Air Force aircraft in use.

NR AFWL-TR-76-68 describes the structure and operation of a computerized routine used to detect and document errors in the AQAM input data decks. Unreproducible

A description of the mechanics of the AQAM computer codes will be published in FY76 by the Argonne National Laboratories.

An unpublished letter report by the University of New Mexico Civil Engineering Research Facility (CERF) describes the methods to develop a computerized contouring code to be used with the AQAM. This report,is entitled Development of a Contouring Capability to Display Results of the Air Quality Assessment Model.

The author recognizes the efforts of Mr. Ronald DiNello (AFWL/ADS), Lieutenant John Manfredi (AFWL/WE), Ms. Lynn Wright (OL-AA, AFCEC), and Captains Dennis Naugle and Bradford Grems (AFCEC/EV) for their editorial comments, suggestions, and assistance in assembling this report. To the above personnel, the author is most grateful.

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SECTION I

INTRODUCTION

The USAF in a contractual effort with Argonne National Laboratories has developed a computerized model for assessing the impact of airbase and aircraft operations on the ambient air. This Air Quality Assessment Model (AQAM) is used by Air Force personnel to help formulate environmental impact statements and to help quantify the extent to which airbase operations affect the air quality in the regions surrounding airbase installations.

The purpose of this guide is to describe, in detail, the methods of operating the AQAM and coding and punching raw airbase data into properly structured input data decks.

Three separate input card decks are required for full AQAM operation. The first contains data for the source inventory program, and the other two are used for the short-term and long-term dispersion programs. Each data deck is made up of a group of data sets. The data punched within each data set is very specific and highly structured. The methods for the creation of these input data decks are fully documented in this guide.

This guide is a companion report to AFWL-TR-74-304, A Generalized Air Quality Assessment Model for Air Force Operations, which describes the mathematical basis for the model, and AFWL-TR-75-220, Air Quality Assessment Model Field Data Collection Guide, which describes a method for collecting raw airbase data. This report makes no attempts to describe either the mathematical theory of the model or the methods of field data collection on airbases. It does, however, assume that the user is acquainted with both subjects. Therefore, it is important that this guide is used in conjunction with both reports.

SECTION II

GENERAL OPERATING INSTRUCTIONS

The AQAM is made up of three separate codes: the source inventory code; the short-term dispersion code; and the long-term dispersion code. The long-term dispersion code utilizes a meteorological data tape which is created from a code operated by the Air Force Environmental Technical Application Center (ETAC). The structure of this tape is described in appendix H. The short-term and long-term dispersion programs are designed to produce files which are compatible with computerized routines which create contour plots of the results and statistically analyze the data.

The source inventory code must be run successfully before the dispersion codes can be used. This program computes the total annual emissions for several source categories at a given airbase. This information, along with all source geometries and dispersion parameters, is printed on the line printer and written on a disk or magnetic tape file. This file is defined in the source inventory code as Logical Unit 21. It is usually written to a temporary file storage device until a sufficient number of runs have been made and the user is confident that all computations are correct. At this point the source inventory code is rerun to create a permanent source emission data base for the airbase from which the data were collected. This permanent file is then used as a source inventory data base by both the short-term and long-term dispersion codes in the calculation of average concentrations on or around this airbase. This file is defined as Logical Unit 21 in both dispersion codes and must be included for each dispersion run.

The dispersion programs require detailed meteorological information for the period being modelled. The meteorological conditions for the short-term calculations are punched on formatted cards and are placed within the short-term card input deck. The long-term calculations, however, require climatological data which statistically represent the airbase under study. These data are coded on a magnetic tape by the Air Force Environmental Technical Application Center (ETAC) (see appendix H). It is read by the long-term model during the initial stages of execution and is defined as Logical Unit 10.

The average execution time for the source inventory code is less than 3 cp seconds (on a CDC 7600) and operates in less than 130K octal words of core. The long-term and short-term codes, however, have extremely variable running times which range from 30 seconds to 3 hours cp time (on a CDC 7600) and require up to 140K octal words of core. This time varies with the complexity of the input data and the total number of airbase locations for which predictions are calculated. The long-term code is provided with a restart capability. Information is written to Logical Unit 11 (tape or disk file) during execution. If the program abnormally terminates, by a time limit error or previously arranged operation intervention, information is printed on the line printer which informs the user of what values he must punch on an input card to start the long-term from that point in execution at some later date. The restart file (Logical Unit 11) contains the necessary information to resume execution and must be included to restart the job.

Generally, no knowledge of the AQAM codes is necessary for coding and punching input data. However, some users may wish to utilize the AQAM code to clarify the input procedure or to verify the operation of the code or the accuracy of this guide. As an aid to these persons, lists are included in appendix G which document the location and definitions of all input variable names defined throughout the AQAM codes.

Both the short-term and long-term codes write output data to a file in a format specified in appendix F. These data are provided for use later in plotting or analyzing results. The logical unit number for this file is 15. In addition, both codes have an input option that will allow information to be written to a file (Logical Unit 25) in a format which is compatible with a computerized routine which statistically analyzes the results. The option also allows the punching of computer cards which can be used by the SYMAP mapping program. SYMAP is run in conjunction with the statistical program. Information concerning the use of this statistical routine can be found in a report published by the Argonne National Laboratories in June 1975, entitled A Statistical Program for the Analysis of Air Quality Computations and Measurements.

SECTION III

USER PREPARATION

Prior to punching an AQAM input data deck, a user must prepare a clear mylar grid overlay for use with a large-scale map of the airbase under study. Additionally, he should read AFWL-TR-76-68, A Computerized Edit Program for the Air Quality Assessment Model (AQAM); AFWL-TR-74-304, A Generalized Air Quality Assessment Model for Air Force Operations; and AFWL-TR-75-220, Air Quality Assessment Model (AQAM) Field Data Collection Guide. AFWL-TR-75-220 is under revision at the Air Force Civil Engineering Center (AFCEC) and will be republished as an AFCEC technical report in FY77.

The base map should be in a large scale since it will be used to identify the location of the emission sources on the airbase. The overlay should be marked with a grid coordinate system in the same scale as the map. The grid should be calibrated in kilometers and have an origin in the lower left-hand corner with the values along the X axis increasing to the right and the values on the Y axis increasing to the top. The grid is overlayed on the map so that all airbase and aircraft sources to be defined are within the positive quadrant of the grid and so that the Y axis will be parallel with the "true north" arrow on the map. The map and grid are then used to define the location of each source on the airbase with a set of X and Y coordinates.

The AQAM input data decks are usually very large. As a result, manual editing is tedious and time consuming and is not sufficient for removing all errors. These errors cause abnormal termination of the AQAM in the final stages of execution. AFWL-TR-76-68 describes the development, structure, and operation of a computerized routine which can detect and document errors in the AQAM input data. This routine operates in a small fraction of the time and core required by the AQAM, and its operation can result in significant savings in manpower and computer time.

AFWL-TR-74-304 is needed to define and describe the mathematical basis of various input parameters and terms. AFWL-TR-75-220 describes the collection and reduction of raw field data. This user's guide along with these two reports have been designed and written for concurrent use. It is important that the user is familiar with the above reports before attempting to code and punch input data for the AQAM.

SECTION IV

SOURCE INVENTORY INPUT DATA

Input data to the source inventory program consist of data sets which contain formatted and free-format card input. Each data set is numbered consecutively and is listed in table 1. The only data set which allows free-format input is the second, NAMELIST. The NAMELIST input allows the user the capability of changing various parameters within the source inventory without actually altering the code. The formatted cards are used to define aircraft, airbase, and environ operational data. Default values are provided for certain parameters in some of the input data sets. A default value is a value that is automatically utilized in the AQAM calculations if a specified set of card columns are left blank. If these columns are punched, however, the value punched will be used in the calculations. The parameters for which there are available defaults are explicitly stated throughout the manual. If there is no mention of a default, it can be assumed that defaults are not available for this input parameter.

Each aircraft, airbase, and environ source is identified by a number chosen by the user. The identifiers for the aircraft sources are two-digit numbers determined arbitrarily. The identifiers for the airbase and environ sources are four-digit numbers which are also determined by the user but which are unique among all other airbase or environ source identifications. A suggested numbering scheme can be found in table 23.

All data sets in AQAM input are preceded by a card which identifies the particular set of data which will follow. The rules for punching this card are defined in appendix E.

SOURCE INVENTORY DATA SET 1 - TITLE INFORMATION AND DESCRIPTION OF AIRBASE SOURCES AND LOCATIONS

This data set provides data to be used for labeling the source inventory output in large block letters and for describing the airbase sources and their grid locations. The labeling consists of four lines of block letters and approximately 1-inch high. The label is centered horizontally or vertically on the paper. The character set is made up of alphanumeric characters and a blank. The first two lines are used by the program to print the words AQAM SOURCE and INVENTORY. The next two lines consist of characters specified in cards one and two of this data set. Cards three through six are used to describe the airbase sources and to define the source locations in degrees of latitude and longitude as well as coordinates in the Universal Transverse Mercator (UTM) system.

CARD NUMBER 1 FORMAT(12A1)

card columns	unit	definition
1-12	-	Characters to appear in the third line of the Block Letter title. Characters start in col 1 (maximum of 12).

CARD NUMBER 2 FORMAT(12A1)

card columns	unit	definition
1-12	-	Characters to appear in the fourth line of the Block Letter title. Characters start in col 1 (maximum of 12).

CARD NUMBER 3 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of grid origin locations to be described.

NOTE: If this value is zero, skip to Card Number 5.

CARD NUMBER 4 FORMAT(6A6,2(2I4,F6.3),2F8.3)

card columns	unit	definition
1-36	-	Description of grid origin location.
37-40	degrees	Degrees of latitude for this source.
41-44	minutes	Minutes of latitude for this source.
45-50	seconds	Seconds of latitude for this source.
51-54	degrees	Degrees of longitude for this source.
55-58	minutes	Minutes of longitude for this source.
59-64	seconds	Seconds of longitude for this source.
65-72	kilometers	Coordinate of UTM Northing for this source.
73-80	kilometers	Coordinate of UTM Easting for this source.

CARD 4 IS REPEATED FOR EACH GRID ORIGIN LOCATION TO BE DESCRIBED AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 3, DATA SET 1.

CARD NUMBER 5 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of airbase sources to be described.

NOTE: If this value is zero, skip to Data Set 2.

CARD NUMBER 6 FORMAT(I4,A10,2X,8A8)

card columns	unit	definition
1-4	-	Four-digit source ID number for this airbase source.
5-14	-	Identification of this airbase source (name or number).
17-80	-	Verbal description of this airbase source.

THIS CARD IS REPEATED FOR EACH AIRBASE SOURCE TO BE DESCRIBED AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 5, DATA SET 1.

SOURCE INVENTORY DATA SET 2 - NAMELIST DATA (EGDATA, ACDATA, SEDATA)

The NAMELIST input consists of three NAMELIST group entries. Each group entry is named and allows the user to change internally programmed data values without permanently altering the computer code.

Each NAMELIST group entry, its associated variable names, and corresponding definitions are listed in table 2. These values have been programmed into the AQAM code and, unless reassigned, they will be used in all calculations of aircraft emissions. If the user feels that his data are more accurate than those programmed, he may reassign these values by using the NAMELIST input data set (see appendix A). The user has the option in this data set to change as many default values as is necessary. However, even if no variable names are entered, each of the three NAMELIST groups must be included as part of the input data. In this case, each group would contain a null set of reassignments.

SOURCE INVENTORY DATA SET 3 - METEOROLOGICAL DATA

Meteorological conditions for the airbase under study are required for use in the computation of certain aircraft landing and takeoff parameters (see table 22) in the calculation of hydrocarbon working and breathing loss emissions from enclosures containing petroleum fuels.

CARD NUMBER 1 FORMAT(5F8.2)

card columns	unit	definition
1-8	degrees F	Average annual temperature.
9-16	-	Annual degree days.
17-24	hundred ft	Pressure altitude.
25-32	m/sec	Annual average wind speed.
33-40	degrees F	Daily average temperature variation.

SOURCE INVENTORY DATA SET 4 - AIRBASE AIRCRAFT AND RUNWAY TOTALS

The information coded in this data set defines the total number of aircraft, runways, parking areas, special cases, and taxiway segments used at this particular airbase. These totals are used to determine the total number of cards to be input in Data Sets 6 through 9.

This data set must be present for every source inventory run.

CARD NUMBER 1 FORMAT(5I4)

card columns	unit	definition
4	-	Total number of aircraft types (maximum of 8, minimum of 1).
8	-	Total number of runways used (maximum of 6, minimum of 1).
12	-	Total number of parking areas (maximum of 6, minimum of 1).
16	-	Total number of special case wind conditions (see appendix C) (maximum of 3, minimum of 0).
19-20	-	Total number of taxiway path segments* (maximum of 25, minimum of 1).

*See Data Set 7.

SOURCE INVENTORY DATA SET 5 - AIRCRAFT ACTIVITY

Activity for aircraft is defined as the total annual number of arrivals, departures, and touch and go's. Each arrival and each departure of an aircraft is considered as an operation in the landing and takeoff cycle (LTO). A touch and go, however, is a complete cycle and occurs during a training flight when a pilot approaches and lands on a runway, travels down the runway for several seconds, accelerates and lifts off. This information is used by the model for calculating the total annual emissions for a given aircraft.

CARD NUMBER 1 FORMAT(6X,I2,3F8.0)

card columns	unit	definition
7-8	-	Aircraft identification number (choose from table 3).
9-16	-	Annual number of arrival operations for this aircraft (minimum of 1).
17-24	-	Annual number of departure operations for this aircraft (minimum of 1).
25-32	-	Annual number of touch and go cycles for this aircraft (minimum of 1).

THIS CARD IS REPEATED FOR EVERY AIRCRAFT TYPE DEFINED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT DEFINED IN DATA SET 4.

SOURCE INVENTORY DATA SET 6 - AIRCRAFT PARKING AREAS

Parking areas are defined by assigning an identification number (determined by the user) and describing the geometries of the parking area. The parking area must be defined as a square or a series of squares if it is rectangular. The user is allowed a maximum of three adjacent squares to define a rectangular or elongated parking area. An X and Y coordinate location must be input for each square making up the parking area. The length of a side of each square is also defined and the model assumes the square is situated so that a line running parallel with its right or left side will be directed north-south.

CARD NUMBER 1 FORMAT(2X,I2,I4,9F8.3)

card columns	unit	definition
3-4	-	Identification numbers for this parking area (chosen arbitrarily by the user).
8	-	Total number of squares making up this parking area (maximum of 3).
9-16	kilometers	X coordinate for the center of square 1.
17-24	kilometers	Y coordinate for the center of square 1.
25-32	kilometers	Length of one side of square 1.

NOTE: The remainder of the card is left blank if only one square is used to define this parking area.

33-40	kilometers	X coordinate for the center of square 2.
41-48	kilometers	Y coordinate for the center of square 2.
49-56	kilometers	Length of one side of square 2.

NOTE: The remainder of the card is left blank if only two squares are used to define the parking area.

57-64	kilometers	X coordinate for the center of square 3.
65-72	kilometers	Y coordinate for the center of square 3.
73-80	kilometers	Length of one side of square 3.

THIS CARD IS REPEATED FOR EVERY PARKING AREA USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT PARKING AREAS DEFINED IN DATA SET 4.

SOURCE INVENTORY DATA SET 7 - AIRCRAFT TAXIWAY PATHS SEGMENTS

Each taxiway path used by the aircraft at a particular base can be defined as a series of connected straight line segments. The geometries of these straight line segments are defined and each is assigned an identification number. There are no restrictions as to the orientation of each segment, and segments are allowed to cross each other or another source or overlap other segments. Once a segment is defined, it can be used to make up several different taxiway paths if necessary. These identifying numbers will be used in Data Set 8 for defining the particular segments that are used to make up a taxiway path.

CARD NUMBER 1 FORMAT(2X,I2,4X,8F8.3)

card columns	unit	definition
3-4	-	Identification number of this taxiway segment. This identifier is determined by the order of input. The first segment must be assigned an ID of 1. The second segment must be assigned an ID of 2, etc.
9-16	kilometers	X coordinate for start point of segment.
17-24	kilometers	Y coordinate for start point of segment.
25-32	meters	Start point height above the ground where the emissions actually occur (if left blank, a value of 4.0 will be used).
33-40	meters	Width of line (if left blank, a value of 20.0 will be used).
41-48	meters	Initial vertical dispersion parameter (if left blank, a value of 8.0 will be used).
49-56	kilometers	X coordinate for end point of segment.
57-64	kilometers	Y coordinate for end point of segment.
65-72	meters	End point height above the ground where the emissions actually occur (if left blank, a value of 4.0 will be used).

THIS CARD IS REPEATED FOR EVERY STRAIGHT LINE TAXIWAY PATH SEGMENT DEFINED FOR THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TAXIWAY PATH SEGMENTS DEFINED IN DATA SET 4.

SOURCE INVENTORY DATA SET 8 - AIRCRAFT RUNWAYS INFORMATION

All information concerning aircraft runways is defined in this data set. Each runway on the airbase must be assigned an identification number which will be used throughout this data set. Each runway is defined as having both a length and direction. Its length is the physical length of the runway pavement in kilometers. Its direction is determined by the orientation of the runway in relation to true north (see appendix C). Aircraft usually prefer a certain direction for LTO operations. The aircraft land and takeoff in this direction for all LTO operations except when the wind is blowing in a tail wind direction. For this specific wind case condition, aircraft will abandon the prime runway direction and takeoff into the wind. For example, consider that at a certain airbase, the prime runway is situated directly east-west. Aircraft takeoff and land toward the west during all wind speeds and directions except for a special case wind condition of an east wind of greater than 10 knots. During this special case condition, all landing and takeoffs would occur from west to east. The AQAM provides the user the capability to define up to three special case wind conditions. Definition of the conditions that constitute a special case are made in the short-term and long-term dispersion codes. However, the source inventory requires a description of the runways used during each special case wind condition. In addition, the runway usage can be defined as a function of wind direction only (see appendix C). It is important to note that if a runway is used for LTOs from both directions, it is coded as two separate and distinct runways which overlap each other.

Each individual aircraft type may use several different runways, parking areas, and taxiway paths. Therefore, the arrivals and departures of individual aircraft types are defined for each runway. Also, a set of inbound and outbound taxiway paths are defined from each parking area to every runway. As a result, several distinct taxiway paths may be defined for each runway. The model assumes that once an aircraft begins his taxi on a particular path, his destination will be either the parking area or runway to which the path is assigned. Fractional usage of taxi paths is defined as a function of aircraft type and runway.

CARD NUMBER 1 (RUNWAY GEOMETRIES) FORMAT(2X,I2,4X,7F8.3)

card columns	unit	definition
3-4	-	Identification number for this runway (chosen arbitrarily by the user).
9-16	kilometers	X coordinate for the beginning of this runway.
17-24	kilometers	Y coordinate for the beginning of this runway.
25-32	meters	The height above the ground where the emissions actually occur; i.e., the aircraft engine (if left blank, a value of 4.0 will be used).
33-40	meters	Initial horizontal dispersion parameter (if left blank, a value of 20.0 will be used).
41-48	meters	Initial vertical dispersion parameter (if left blank, a value of 8.0 will be used).
49-56	degrees from true north	Runway angle.
57-64	kilometers	Runway length.

CARD NUMBER 2 (RUNWAY WIND DIRECTION USE) FORMAT(2X,I2,4X,20I1)

card columns	unit	definition
1-4	-	Runway identification number must agree with runway identifier in Card 1, Data Set 8.
9	-	Runway use in calm conditions. Punch a 1 if runway is used during a calm; punch a 0 if it is not.
10-25	-	Runway use related to wind direction. Columns 10 through 25 correspond to 16 wind directions (Col 10 = North, Col 11 = North Northeast, Col 12 = Northeast, etc.). Punch a 1 in appropriate column if runway is used when the wind is from that direction; punch a 0 if it is not used (see appendix C).

26-28	-	Runway use in special case wind conditions. Columns 26-28 correspond to three special case wind conditions. Punch a 1 if the runway is used during this special case wind condition; punch a 0 if it is not used (see appendix C).

NOTE: The actual meteorological conditions which constitute a special case will be defined in the short-term and long-term input data.

CARD NUMBER 3 (RUNWAY ARRIVALS) FORMAT(2X,I2,4X,8F8.0)

card columns	unit	definition
3-4	-	Runway identification number. It must be identified to the runway identifier in Card 1, Data Set 8.
9-72	-	Total number of annual arrivals of each aircraft on this runway.* Columns 8-16 contain the total arrivals for the FIRST aircraft defined in Data Set 5, Columns 17-24 contain the total annual arrivals for the SECOND aircraft, etc., to Column 72. If less than eight aircraft have been defined, only the appropriate card columns are punched and the remainder of the card is left blank.

*The arrivals for each aircraft are punched in the order in which they are defined in Card 1, Data Set 5.

CARD NUMBER 4 (RUNWAY DEPARTURES) FORMAT(2X,I2,4X,8F8.0)

card columns	unit	definition
3-4	-	Runway identification number. It must be identical to the runway identifier in Card 1, Data Set 8.
8-72	-	Total annual number of departures of each aircraft on this runway.**

**This information and the procedure for coding it is identical to Data Set 8, Card Number 3, except that total annual DEPARTURES are coded for each aircraft instead of total ARRIVALS.

CARD NUMBER 5 (RUNWAY TAXIWAY PATHS) FORMAT(3I4)

card columns	unit	definition
2-4	-	Runway identification number. It must be identical to the runway identifier in Card 1, Data Set 8.
6-8	-	Total number of inbound taxiway paths for this runway (maximum of 8).
10-12	-	Total number of outbound taxiway paths for this runway (maximum of 8).

CARD NUMBER 6 (INBOUND TAXIWAY USAGE) FORMAT(3I2,2X,8F8.3)

card columns	unit	definition
1-2	-	Runway identification number. It must be identical to the runway identifier in Card 1, Data Set 8.
3-4	-	Inbound taxiway path identifier; chosen arbitrarily by the user.
5-6	-	Identification number of the parking area where this taxiway path terminates. It must be identical to one of the parking area identifiers defined in Data Set 6.
9-72	fraction	Inbound taxiway usage by aircraft type.*

*A fraction is input for each aircraft type used at this base which defines what portion of all aircraft landing on this runway use this taxiway path. The fractions are punched for each aircraft in the order they are defined in Card 1, Data Set 5. Columns 8-16 contain the fractional usage of this taxiway by the FIRST aircraft, columns 17-24 contain the fractional usage of this taxiway by the SECOND aircraft, etc., to column 72. If less than eight aircraft are defined, only the appropriate card columns are punched and the remainder of the card is left blank.

CARD NUMBER 7 (INBOUND TAXIWAY SEGMENTS) FORMAT(4I2,16I4)

card columns	unit	definition
1-2	-	Runway identification number. It must be identical to the runway identifier in Card 1, Data Set 8.

3-4	-	Inbound taxiway path identifier. It must be identical to the taxiway path identifier in Card 6, Data Set 8.
5-6	-	Identification number of the parking area where this path terminates. It must be identical to the parking area identifier in Card 6, Data Set 8.
7-8	-	Total number of taxiway segments forming this inbound taxiway path (maximum of 16).
9-72	-	Identifier for the taxiway segments forming this taxiway path.*

*Columns 9-12 contain the identifier for the first segment forming this path, columns 13-16 contain the identifier for the second segment, etc. The total number of segment identifiers punched must equal the value punched in columns 7 and 8 of this card.

CARDS 6 AND 7 ARE PUNCHED AS A PAIR. A SET OF THESE TWO CARDS MUST BE REPEATED FOR EVERY INBOUND TAXIWAY PATH AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF INBOUND TAXIWAY PATHS DEFINED IN CARD 5, DATA SET 8.

CARD NUMBER 8 (OUTBOUND TAXIWAY USAGE) FORMAT(3I2,2X,8F8.3)

card columns	unit	definition
1-2	-	Runway identification number. It must be identical to the runway identifier in Card 1, Data Set 8.
3-4	-	Outbound taxiway path identifier; chosen arbitrarily by the user.
5-6	-	Identification number of the parking area where this taxiway path terminates. It must be identical to one of the parking area identifiers defined in Data Set 6.
9-72	fraction	Outbound taxiway usage by aircraft type.*

*A fraction for each aircraft type used at this base which defines what fraction of all aircraft departing on this runway use this taxiway path. The fractions are coded for each aircraft in the order they are defined in Card 1, Data Set 5. Columns 8-16 contain the fractional usage of this taxiway by the FIRST aircraft. Columns 17-24 contain the fractional usage of this taxiway by the SECOND aircraft, etc., to column 72. If less than 8 aircraft are defined, only the appropriate card columns are punched and the remainder of the card is left blank.

CARD NUMBER 9 (OUTBOUND TAXIWAY SEGMENTS) FORMAT(4I2,16I4)

card columns	unit	definition
1-2	-	Runway identification number. It must be identical to the runway identifiers in Card 1, Data Set 8.
3-4	-	Outbound taxiway path identifier. It must be identical to the path identifier in Card 8, Data Set 8.
5-6	-	Identification number of the parking area where this path terminates. It must be identical to the parking area identifier in Card 8, Data Set 8.
7-8	-	Total number of taxiway segments forming this outbound taxiway path.
9-72	-	Identifier for the taxiway segments forming this taxiway path.*

*Columns 9-12 contain the identifier for the first segment forming this path. Columns 13-16 contain the identifier for the second segment, etc., to column 72. The total number of segment identifiers coded must equal the value coded in columns 7 and 8 of this card.

CARDS 8 AND 9 ARE PUNCHED AS A PAIR. A SET OF THESE TWO CARDS MUST BE REPEATED FOR EVERY OUTBOUND TAXIWAY PATH AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL OF OUTBOUND TAXIWAY PATHS DEFINED IN CARD 5, DATA SET 8. THESE TWO CARDS ARE ANALOGOUS TO CARDS 6 AND 7 OF DATA SET 8.

CARDS 1 THROUGH 9 IN DATA SET 8 MUST BE REPEATED FOR EVERY RUNWAY DEFINED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF RUNWAYS DEFINED IN DATA SET 4.

SOURCE INVENTORY DATA SET 9 - AEROSPACE GROUND EQUIPMENT EMISSIONS

Aerospace Ground Equipment (AGE) consists of all motorized equipment except refueling tanks which are used to support incoming and outgoing aircraft. These support vehicles generally consist of coolers, power generators, heaters, and hydraulic test stands. The emissions for this equipment must be determined and input directly into the model. The model assumes that all AGE activities occur in the aircraft parking areas, but the emissions are calculated separately from those emissions resulting from aircraft parking activity.

CARD NUMBER 1 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from gasoline-consuming AGE equipment servicing this INCOMING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from gasoline-consuming AGE equipment servicing this INCOMING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from gasoline-consuming AGE equipment servicing this INCOMING aircraft.
25-32	kg/operation	Particulate emissions resulting from gasoline-consuming AGE equipment servicing this INCOMING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from gasoline-consuming AGE equipment servicing this INCOMING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN DATA SET 4.

CARD NUMBER 2 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JP-4-consuming AGE equipment servicing this INCOMING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JP-4-consuming AGE equipment servicing this INCOMING AIRCRAFT.

17-24	kg/operation	Nitrogen oxide emissions resulting from JP-4-consuming AGE equipment servicing this INCOMING aircraft.
25-32	kg/operation	Particulate emissions resulting from JP-4-consuming AGE equipment servicing this INCOMING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JP-4-consuming AGE equipment servicing this INCOMING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN DATA SET 4.

CARD NUMBER 3 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JP-5-consuming AGE equipment servicing this INCOMING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JP-5-consuming AGE equipment servicing this INCOMING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JP-5-consuming AGE equipment servicing this INCOMING aircraft.
25-32	kg/operation	Particulate emissions resulting from JP-5-consuming AGE equipment servicing this INCOMING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JP-5-consuming AGE equipment servicing this INCOMING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 4 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JP-8-consuming AGE equipment servicing this INCOMING aircraft.

9-16	kg/operation	Hydrocarbon emissions resulting from JP-8-consuming AGE equipment servicing this INCOMING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JP-8-consuming AGE equipment servicing this INCOMING aircraft.
25-32	kg/operation	Particulate emissions resulting from JP-8-consuming AGE equipment servicing this INCOMING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JP-8-consuming AGE equipment servicing this INCOMING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 5 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JET A-consuming AGE equipment servicing this INCOMING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JET A-consuming AGE equipment servicing this INCOMING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JET A-consuming AGE equipment servicing this INCOMING aircraft.
25-32	kg/operation	Particulate emissions resulting from JET A-consuming AGE equipment servicing this INCOMING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JET A-consuming AGE equipment servicing this INCOMING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 6 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from gasoline-consuming AGE equipment servicing this OUTGOING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from gasoline-consuming AGE equipment servicing this OUTGOING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from gasoline-consuming AGE equipment servicing this OUTGOING aircraft.
25-32	kg/operation	Particulate emissions resulting from gasoline-consuming AGE equipment servicing this OUTGOING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from gasoline-consuming AGE equipment servicing this OUTGOING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 7 FORMAT (5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JP-4-consuming AGE equipment servicing this OUTGOING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JP-4-consuming AGE equipment servicing this OUTGOING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JP-4-consuming AGE equipment servicing this OUTGOING aircraft.
25-32	kg/operation	Particulate emissions resulting from JP-4-consuming AGE equipment servicing this OUTGOING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JP-4-consuming AGE equipment servicing this OUTGOING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 8 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JP-5-consuming AGE equipment servicing this OUTGOING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JP-5-consuming AGE equipment servicing this OUTGOING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JP-5-consuming AGE equipment servicing this OUTGOING aircraft.
25-32	kg/operation	Particulate emissions resulting from JP-5-consuming AGE equipment servicing this OUTGOING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JP-5-consuming AGE equipment servicing this OUTGOING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 9 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JP-8-consuming AGE equipment servicing this OUTGOING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JP-8-consuming AGE equipment servicing this OUTGOING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JP-8-consuming AGE equipment servicing this OUTGOING aircraft.
25-32	kg/operation	Particulate emissions resulting from JP-8-consuming AGE equipment servicing this OUTGOING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JP-8-consuming AGE equipment servicing this OUTGOING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

CARD NUMBER 10 FORMAT(5F8.3)

card columns	unit	definition
1-8	kg/operation	Carbon monoxide emissions resulting from JET A-consuming AGE equipment servicing this OUTGOING aircraft.
9-16	kg/operation	Hydrocarbon emissions resulting from JET A-consuming AGE equipment servicing this OUTGOING aircraft.
17-24	kg/operation	Nitrogen oxide emissions resulting from JET A-consuming AGE equipment servicing this OUTGOING aircraft.
25-32	kg/operation	Particulate emissions resulting from JET A-consuming AGE equipment servicing this OUTGOING aircraft.
33-40	kg/operation	Sulfur oxide emissions resulting from JET A-consuming AGE equipment servicing this OUTGOING aircraft.

THIS CARD IS REPEATED FOR EVERY AIRCRAFT USED AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF AIRCRAFT TYPES DEFINED IN CARD 1, DATA SET 4.

SOURCE INVENTORY DATA SET 10 - AIRCRAFT REFUELING, SPILLAGE, AND VENTING TOTALS

The total amount of fuel used for refueling and venting aircraft is defined in this data set. Fuel venting is described as the amount of surplus fuel drained from the aircraft fuel lines. The model assumes that the refueling and venting operations occur in the parking area.

CARD NUMBER 1 FORMAT(8X,8I8)

card columns	unit	definition
4-32	-	Identification of fuel to be used in refueling aircraft (choose from table 9).*

*Card columns 9-16 contain the identification of the fuel to be used in refueling the first aircraft defined in Data Set 4; columns 17-24 contain the fuel identification for refueling the second aircraft; columns 25-32 contain the fuel identification for refueling the third aircraft, etc., to column 72.

CARD NUMBER 2 FORMAT(2X,I2,4X,8F8.3)

card columns	unit	definition
3-4	-	Indicator defining whether all aircraft will have a separate value for refueling or all aircraft will have same values.**

**If each aircraft is to have a separate refueling value, the value punched in columns 3 and 4 must equal the total number of aircraft types used at this base, and card columns 9-72 are punched with the same totals for each aircraft. If each aircraft is to use the same refueling value, the value coded in columns 3 and 4 is 1 and columns 9-16 contain this refueling total.

9-72	liters	Refueling value(s).***

***Card columns 9-16 contain the refueling totals for the first aircraft defined in Data Set 4; columns 17-24 contain the refueling totals for the second aircraft; columns 25-32 contain the refueling totals for the third aircraft, etc., to column 72.

CARD NUMBER 3 FORMAT(2X,I2,4X,8F8.3)

card columns	unit	definition
3-4	-	Indicator defining whether all aircraft will have a separate value of fuel spillage or if all aircraft use the same spillage value.
9-72	liters	The fuel spillage totals for aircraft are punched in columns 9-72 according to the rules in Card 2, Data Set 10.

CARD NUMBER 4 FORMAT(2X,I2,4X,8F8.3)

card columns	unit	definition
3-4	-	Indicator defining whether all aircraft will have a separate value of fuel venting for ARRIVING aircraft or if all ARRIVING aircraft use the same venting value.
9-72	liters	The fuel venting totals for ARRIVING aircraft are punched in Columns 9-72 according to the rules in Card 2, Data Set 10.

CARD NUMBER 5 FORMAT(2X,I2,4X,8F8.3)

card columns	unit	definition
3-4	-	Indicator defining whether all aircraft will have a separate value of fuel venting for DEPARTING aircraft or if all DEPARTING aircraft use the same venting value.
9-72	liters	The fuel venting value for DEPARTING aircraft is punched in Columns 9-72 according to the rules in Card 2, Data Set 10.

SOURCE INVENTORY DATA SET 11 - AIRBASE VEHICLE AGE DISTRIBUTION

The age distribution of all civilian and military vehicles on the airbase is defined in this data set. Vehicles are categorized in six vehicle classes (table 4). Within each vehicle class 16 fractions are input which define the fraction of total civilian vehicles within a certain age group. There are 16 age groups with each group corresponding to vehicle age of from 1 to 15 years. Emission factors for vehicles vary as a function of their age and class and these fractions and class categories will be used to determine what emission factors are to be used in the calculation of emissions from motor vehicle traffic. The user has the option of using a default age distribution for all or for specific vehicle classes.

CARD NUMBER 1 FORMAT(I4,8X,3I4)

card columns	unit	definition
4	-	ID of the emission factors to be used to calculate emissions from motor vehicles at this base (choose from table 10).
16	-	Identification number indicating whether the user intends to input an age distribution for military vehicles on this airbase or use the default EPA National vehicle age distribution for all classes. Punch a 0 if the user will input the age distribution. Punch a 1 if the default EPA distribution is to be used for all six vehicle classes.*

*The EPA age distribution is provided as a programmed user option. If the user wishes to use this distribution, code a 1 and do not input an age distribution.

20	-	Identification number indicating whether the user intends to input an age distribution for civilian vehicles on this airbase or use the default EPA National vehicle age distribution for all classes. The same values are used for punching this data as for Column 16 of this card.
21-24	-	The year that the age distribution for military and civilian vehicles was calculated (no abbreviation allowed, i.e., year 1973 is not punched as 73).

CARD NUMBER 2 FORMAT(I2,2X,I2,2X,16F4.4)

NOTE: This card is input only if the value in Column 16 of Card 1, Data Set 11, is a 0. Proceed to Card 3 if the value is 1.

card columns	unit	definition
2	-	Identification number of the military vehicle class for which the vehicle age distribution is to be input (see table 4).
6	-	Identifier indicating whether the user intends to input the age distribution for this class or use the EPA National vehicle age distribution. Code a 1 if the class used the EPA distribution. Code a 0 if the age distribution is input. This identifier applies to this class only.*

*The remainder of the card is left blank and the EPA vehicle age distribution is automatically used FOR THIS CLASS ONLY if the value in Column 6, Card 2, is a 1.

9-72	-	The remainder of this card contains the fractions of total vehicles in this class in each of the vehicle age categories. Columns 9-12 contain the fraction of all new vehicles. Columns 13-16 contain the fraction of vehicles 1 year old, etc., to Column 72.

EACH FRACTION IS INPUT AS A FOUR-DIGIT NUMBER WITHOUT THE DECIMAL POINT. THE DECIMAL POINT WILL BE AUTOMATICALLY ADDED WHEN THE NUMBER IS READ. THE 16 FRACTIONS MUST TOTAL TO 1.). THIS CARD IS REPEATED FOR EACH OF THE SIX VEHICLE CLASSES.

NOTE: The following card is input only if the value in Column 20 of Card 1 is a 0. Proceed to Data Set 12 if the value is 1.

CARD NUMBER 3 FORMAT(I2,2X,I2,2X,16F4.4)

card columns	unit	definition
2	-	Identification number of the civilian vehicle class for which the vehicle age distribution is to be input (see table 4).
6	-	Identifier indicating whether the user intends to input the age distribution or use the EPA National vehicle age

distribution. The same rules are used for punching civilian vehicle age distribution as for Card 2, Data Set 11.

THIS CARD IS REPEATED FOR EACH OF THE SIX VEHICLE CLASSES.

SOURCE INVENTORY DATA SET 12 - NUMBER OF AIRBASE POINT SOURCES

A value indicating the total number of airbase point sources on this airbase is punched in this data set. Data sets 13 through 19 define the location and characteristics of each point source.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of point sources to be defined for this base (maximum of 150).

NOTE: If the total number of point source sites is zero, Data Sets 13 through 19 are not punched and the next Data Set to be input is Data Set 20. If the total number is greater than zero, Data Sets 13 through 19 must be punched.

SOURCE INVENTORY DATA SET 13 - TRAINING FIRE POINT SOURCES

Training fire point sources are defined as shallow ground level sites on the airbase which are filled with fuel and ignited for the purpose of training fire fighters. This is usually done periodically at several different sites on the base.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of training fire sites to be described.

NOTE: If this value is zero, skip to the next Data Set.

CARD NUMBER 2 FORMAT(2I4,8F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Plume rise formula ID (choose from table 5).
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of this site above surrounding ground level. If left blank, a 0.0 will be used.
33-40	meters	Initial horizontal dispersion parameter. If left blank, a value of 91.44 will be used.
41-48	meters	Initial vertical dispersion parameter. If left blank, a value of 152.4 will be used.
49-56	kcal/sec	Heat emission rate of an average training fire at this site. If left blank, a value of 25400. will be used.
57-64	-	Annual number of fires at this site.

65-72	gallons	Average amount of JP-4 consumed per fire at this site.

THIS CARD IS REPEATED FOR EVERY TRAINING FIRE SITE WHICH IS USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 13.

SOURCE INVENTORY DATA SET 14 - TEST CELL POINT SOURCES

A test cell point source is defined as an enclosure with a vertical exhaust which is designed to test aircraft engines after a mechanical overhaul.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of test cell sites to be described.

NOTE: If this value is zero, skip to the next Data Set.

CARD NUMBER 2 FORMAT(2I4,9F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Total number of engine types being tested at this site.
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of the exhaust stack above the surrounding ground level. If left blank, a value of 10.0 will be used.
33-40	meters	Initial horizontal dispersion parameter. If left blank, a value of 10.0 will be used.
41-48	meters	Initial vertical dispersion parameter. If left blank, a value of 10.0 will be used.
49-56	°Kelvin	Temperature of the gas at the exit of the exhaust stack. If left blank, a value of 588.6 will be used.
57-64	m/sec	Velocity of the gas at the exit of the exhaust stack. If left blank, a value of 12.5 will be used.
65-72	meters	Diameter of the exhaust stack. If left blank, a value of 9.0 will be used.

73-80	meters	Height of the test cell building (not including the exhaust stack) above the ground. If left blank, a value of 10.0 will be used.

CARD NUMBER 3 FORMAT(2I4,5F8.4)

card columns	unit	definition
1-4	-	Four-digit source ID number which is identical to the source ID in Card 2.
5-8	-	ID of aircraft engine tested at this site (choose from table 3).
9-16	-	Annual number of tests of this engine at this site.
17-24	min/test	Average time this engine type is tested in this test cell in the IDLE mode.
25-32	min/test	Average time this engine type is tested in this test cell in the NORMAL mode.
33-40	min/test	Average time this engine type is tested in this test cell in the MILITARY mode.
41-48	min/test	Average time this engine type is tested in this test cell in the AFTERBURNER mode.

CARD 3 IS REPEATED FOR EVERY ENGINE TYPE BEING TESTED IN THIS TEST CELL AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF ENGINE TYPES PUNCHED IN CARD 2, COLUMN 8. CARD 2 WITH AN ASSOCIATED SET OF CARD(S) 3 IS REPEATED FOR EVERY TEST CELL USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1, DATA SET 14.

SOURCE INVENTORY DATA SET 15 - RUN-UP STAND POINT SOURCES

A runup stand is defined as an open structure used for testing aircraft turbine engines. The exhaust from runup stands is generally horizontal.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of runup stand sites to be described.

NOTE: If this value is zero, skip to the next Data Set.

CARD NUMBER 2 FORMAT(2I4,9F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Total number of engine types being tested at this site.
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of the exhaust stack above the surrounding ground level (horizontal stack is assumed). If left blank, a value of 5.0 will be used.
33-40	meters	Initial horizontal dispersion parameter. If left blank, a value of 5.0 will be used.
41-48	meters	Initial vertical dispersion parameter. If left blank, a value of 5.0 will be used.
49-56	°Kelvin	Temperature of the gas at the exit of the exhaust stack. If left blank, a value of 0.0 will be used.
57-64	m/sec	Vertical velocity of the gas at the exit of the exhaust stack. If left blank, a value of 0.0 will be used.
65-72	meters	Diameter of the exhaust stack. If left blank, a value of 0.0 will be used.

73-80	meters	Height of the runup stand above the ground. If left blank, a value of 5.0 will be used.

CARD NUMBER 3 FORMAT(2I4,4F8.4)

card columns	unit	definition
1-4	-	Four-digit ID number which is identical to ID in Card 2.
5-8	-	ID of aircraft engine tested at this site (choose from table 3).
9-16	-	Annual number of tests of this engine at this site.
17-24	min/test	Average time this engine type is tested in this runup stand in the IDLE time.
25-32	min/test	Average time this engine type is tested in this runup stand in the NORMAL mode.
33-40	min/test	Average time this engine type is tested in this runup stand in the MILITARY mode.
41-48	min/test	Average time this engine type is tested in this runup stand in the AFTERBURNER mode.

CARD 3 IS REPEATED FOR EVERY ENGINE TYPE BEING TESTED IN THIS RUNUP STAND AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE TOTAL NUMBER OF ENGINE TYPES PUNCHED IN CARD 2, COLUMN 8. CARD 2 WITH AN ASSOCIATED SET OF CARD(S) 3 IS REPEATED FOR EVERY RUNUP STAND USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1, DATA SET 15.

SOURCE INVENTORY DATA SET 16 - POWER PLANT POINT SOURCES

Power plants are defined as large fossil fuel facilities used to produce power for industrial process and/or treating large portions of the airbase.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of power plant sites to be described.

NOTE: If this value is zero, skip to the next Data Set.

CARD NUMBER 2 FORMAT(2I4,9F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Plume rise formula ID (choose from table 5).
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of the exhaust stack above the surrounding ground level.
33-40	meters	Initial horizontal dispersion parameter.
41-48	meters	Initial vertical dispersion parameter.
49-56	°Kelvin	Temperature of the gas at the exit of the exhaust stack.
57-64	m/sec	Velocity of the gas at the exit of the exhaust stack.
65-72	meters	Diameter of the exhaust stack.
73-80	meters	Height of the building above ground (not including the stack).

CARD NUMBER 3 FORMAT(2I4,3F8.2,I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2, Data Set 16.
7-8	-	Power plant emission factor identification number (choose from table 6).
9-16	percent of total fuel	Amount of sulfur in the fuel burned at this plant.*

*If liquified petroleum is burned at this plant, the grains of sulfur per 10,000 cubic meters of gas vapor is input instead of the percent of sulfur.

17-24	percent of total fuel	Amount of ash in the fuel burned at this plant.
25-32	(see table 6 to determine units)	Average annual amount of fuel burned at this plant.
36	-	Value indicating if any pollutants are controlled at this plant. Punch a 1 if some or all pollutants are controlled. Punch a 0 if no pollutants are controlled.

CARD NUMBER 4 FORMAT(2I4,6(I4,F4.3))

NOTE: Card 4 is not input if no pollutants are controlled.

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
8	-	Number of pollutants controlled at this plant.
9-56	-	The pollutant ID number and the fraction it is controlled is input for all pollutants which are controlled. The pollutant ID can be found in table 7. The pollutant ID and the fraction it is controlled are coded together; that is, Columns 9-12 would contain the ID for the first pollutant controlled and Columns 13-16 would contain the fraction it is controlled. Columns 17-20 would contain the ID of the

second pollutant controlled and Columns 21-24 would contain the fraction it is controlled, etc.

CARDS 2, 3, 4 (IF APPLICABLE) ARE PUNCHED TOGETHER. THIS SET OF CARDS MUST BE REPEATED FOR EACH POWER PLANT USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE CODED IN CARD 1, DATA SET 16.

SOURCE INVENTORY DATA SET 17 - INCINERATOR POINT SOURCES

An incinerator is defined as a site where the controlled burning of waste material takes place.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of incinerator sites to be described.

NOTE: If this value is zero, skip to the next Data Set.

CARD NUMBER 2 FORMAT(2I4,9F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Plume rise formula ID (choose from table 5).
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of exhaust stack above the surrounding ground level.
33-40	meters	Initial horizontal dispersion parameter.
41-48	meters	Initial vertical dispersion parameter.
49-56	°Kelvin	Temperature of the gas at the exit of the exhaust stack.
57-64	m/sec	Velocity of the gas at the exit of the exhaust stack.
65-72	meters	Diameter of the exhaust stack.
73-80	meters	Height of the building above ground (not including the stack).

CARD NUMBER 3 FORMAT(2I4,F8.2,I4)

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
7-8	-	Incinerator emission factor identification number (choose from table 8).
9-16	metric ton	Average annual amount of waste material burned at this site.
20	-	Value indicating if any pollutants are controlled at this site. Punch a 1 if some or all pollutants are controlled. Punch a 0 if no pollutants are controlled.

CARD NUMBER 4 FORMAT(2I4,6(I4,F4.3))

NOTE: Card 4 is not input if no pollutants are controlled.

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
8	-	Number of pollutants controlled at this plant.
9-56	-	The pollutant ID number and the fraction controlled are input for all pollutants which are controlled. The pollutant ID can be found in table 7. The pollutant ID and the fraction controlled are punched together; that is, Columns 9-12 would contain the ID for the first pollutant controlled and Columns 13-16 would contain the fraction it is controlled. Columns 17-20 would contain the ID of the second pollutant controlled and Columns 21-24 would contain the fraction it is controlled, etc.

CARDS 2, 3, 4 (IF APPLICABLE) ARE PUNCHED TOGETHER. THIS SET OF CARDS MUST BE REPEATED FOR EACH POWER PLANT USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1, DATA SET 17.

SOURCE INVENTORY DATA SET 18 - PETROLEUM STORAGE TANK POINT SOURCES

Petroleum storage tanks are storage sites that contain petroleum products before they are distributed to usage facilities. Storage tanks are treated as either fixed roof or floating roof tanks. A different set of cards are input according to the type of roof defined. Cards 2, 3, and Card Set 1 are used to define fixed roof tanks and Cards 2, 3 and Card Set 2 are used to define floating roof tanks.

If a storage tank site contains more than one storage tank of the same size in very close spatial vicinity to each other, it may be defined as a point source. Input parameters in Card 2 concerning the size and usage of the site refer to only one of the tanks. The initial horizontal dispersion parameter, however, should be set equal to the diameter of a circle enclosing all the tanks of the same size which are being defined together as a point. The total number of tanks at this site are input in Card Sets 1 or 2. The model assumes that all tanks are vertical.

CARD NUMBER 1 FORMAT (I4)

card columns	unit	definition
1-4	-	Total number of storage tank sites to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Plume rise formula ID (choose from table 5).
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of stack (tank) above the surrounding ground level. Punch a zero if below ground.

33-40	meters	Initial horizontal dispersion parameter.
41-45	meters	Initial vertical dispersion parameter.

CARD NUMBER 3 FORMAT(I4,4X,2I4,5F8.4)

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
12	-	Fuel identification number of fuel used at this site (choose from table 9).
16	-	Roof identification number. Punch a 1 for fixed roof. Punch a 2 for floating roof.
17-24	kiloliters	Annual throughput of fuel for each tank used at this site.
25-32	kiloliters	Tank fuel capacity.
33-40	°F	Temperature of the fuel in the tank (if left blank, the average annual temperature punched in Data Set 3 will be used).
41-48	°F	Daily average temperature variation of the vapor space above the fuel (if left blank, the daily average temperature variation punched in Data Set 3 will be used).*

*There is no default value for the daily average temperature variation for underground fixed roof storage tanks.

49-56	meters	Tank diameter.

CARD SET NUMBER 1 (Fixed Roof Input for Petroleum Storage Tanks)

NOTE: Card Set 1 is input only if roof ID number in Card 3 equals 1.

CARD 1 OF CARD SET 1 FORMAT(2I4,4F8.4,I4)

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
5-8	-	Number of tanks of the same size at this source which are being punched together as a single point source.

9-16	meters	Average height of the tanks vapor space (if left blank, half of the tank height will be used).
17-24	-	Throughput factor (if left blank, a value of 1.0 will be used).*

*A more detailed exploration of this parameter can be found in AFWL-TR-74-304, pages 50 through 57.

25-32	-	Paint factor (if left blank, a value of 1.2 will be used).
33-40	-	Tank diameter factor (if left blank, a value of 1.0 will be used).
41-44	-	Tank type identifier. Punch a 1 if tank is below ground; punch a 0 if tank is above ground (if left blank, it is assumed to be above ground).

CARD SET NUMBER 2 (Floating Roof Input for Petroleum Storage Tanks)

NOTE: Card Set 2 is input only if roof ID number in Card 3 equals 2.

CARD 1 OF CARD SET 2 FORMAT(2I4,3F8.4)

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
5-8	-	Number of tanks of the same size at this source which are being punched together as a single point source.
9-16	-	Rivet factor (if left blank, a value of 0.1 will be used).
17-24	-	Seal factor (if left blank, a value of 1.0 will be used).
25-32	-	Paint factor (if left blank, a value of 1.0 will be used).

CARDS 2, 3, AND EITHER CARD SET 1 OR CARD SET 2 ARE PUNCHED TOGETHER AND REPEATED FOR EACH STORAGE TANK SITE USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1, DATA SET 18.

SOURCE INVENTORY DATA SET 19 - OTHER AIRBASE POINT SOURCES

This data set is used to define point sources on the airbase which cannot be defined in any of the other point source categories. The total annual emissions for each pollutant must be hand calculated for each source in this category. These hand calculated emissions are input in this data set.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of airbase sources to be defined in the other category.

CARD NUMBER 2 FORMAT(2I4,9F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
8	-	Plume rise formula ID (choose from table 5).
9-16	km	X coordinate at source center.
17-24	km	Y coordinate at source center.
25-32	meters	Height of the exhaust stack above the ground.
33-40	meters	Initial horizontal dispersion parameter.
41-48	meters	Initial vertical dispersion parameter.
49-56	°Kelvin	Temperature of the gas at the exit of the exhaust stack.
57-64	m/sec	Velocity of the gas at the exit of the exhaust stack.
65-72	meters	Diameter of the exhaust stack.
73-80	meters	Height of the building above ground.

CARD NUMBER 3 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit ID number which must be identical to ID in Card 2.
9-16	metric ton/yr	Emissions of carbon monoxide at this source.
17-24	metric ton/yr	Emissions of hydrocarbons at this source.
25-32	metric ton/yr	Emissions of nitrogen oxides at this source.
33-40	metric ton/yr	Emissions of particulates at this source.
41-48	metric ton/yr	Emissions of sulfur oxides at this source.

CARDS 2 AND 3 ARE PUNCHED TOGETHER AND REPEATED FOR EACH OTHER AIRBASE POINT SOURCE USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1, DATA SET 19.

SOURCE INVENTORY DATA SET 20 - AIRBASE AREA SOURCE GEOMETRIES

The physical geometries for each area source on this airbase are defined in this data set. Each area source on the airbase must be described as a square with each square oriented so that a line running parallel with the left or right side of the square will be directed north-south. In addition, each area is assigned an identification number. This number will be used in Data Sets 21 through 29 when defining the emissions from area sources.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of airbase area sources on this airbase (maximum of 150).

NOTE: If the total number of area source sites is zero, Data Sets 21 through 29 are not punched.and the next data set to be punched is Data Set 30. If the total number of areas is greater than zero, Data Sets 21 through 29 must be punched.

CARD NUMBER 2 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined. This ID number will be used in future data sets whenever this source is referenced.
9-16	km	X coordinate at source center.
17-24	km	Y coordinate at source center.
25-32	meters	Average height of the source above ground.
33-40	meters	Length of one side of the square defining this source.
41-48	meters	Initial vertical dispersion parameter. If left blank, a value of 8.0 will be used.

THIS CARD IS REPEATED FOR EACH AREA SOURCE AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE IN CARD 1, DATA SET 20.

SOURCE INVENTORY DATA SET 21 - AIRBASE AREA SOURCES WITH HYDROCARBON FILLING, WORKING LOSS, AND SPILLAGE

Hydrocarbon filling or working losses occur when fuel is transferred from one facility to another. As fuel is pumped from a full to a partially empty tank, the fuel vapors from the partially empty tank are forced out into the atmosphere. In addition, a certain amount of fuel is spilled each time fuel is transferred. The areas on the airbase where these operations occur are described in this data set.

CARD NUMBER 1 FORMAT (I4)

card columns	unit	definition
1-4	-	Total number of hydrocarbon filling or working loss, and spillage areas to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(I4,4X,7F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
9-16	kl/yr	Total amount of automotive gasoline processed at this source.
17-24	kl/yr	Total amount of JP-4 processed at this source.
25-32	kl/yr	Total amount of aviation gasoline processed at this source.
33-40	kl/yr	Total amount of diesel fuel processed at this source.
41-48	kl/yr	Total amount of JP-5 processed at this source.
49-56	kl/yr	Total amount of JP-8 processed at this source.
57-64	kl/yr	Total amount of JET A processed at this source.

CARD NUMBER 3 FORMAT(8X,8F8.2)

card columns	unit	definition
9-16	-	Throughput factor for automotive gasoline processing at this source (if left blank, a value of 1.0 will be used).*

*A more detailed explanation of this parameter can be found in AFWL-TR-74-304, pages 50 through 57.

17-24	-	Throughput factor for JP-4 processing at this source (if left blank, a value of 1.0 will be used).
25-32	-	Throughput factor for aviation gasoline processing at this source (if left blank, a value of 1.0 will be used).
33-40	-	Throughput factor for diesel fuel processing at this source (if left blank, a value of 1.0 will be used).
41-48	-	Throughput factor for JP-5 processing at this source (if left blank, a value of 1.0 will be used).
49-56	-	Throughput factor for JP-8 processing at this source (if left blank, a value of 1.0 will be used).
57-64	-	Throughput factor for JET A processing at this source (if left blank, a value of 1.0 will be used).
65-72	metric ton/yr	Total amount of fuel (all types) spilled at this source.

CARDS 2 AND 3 ARE INPUT TOGETHER AND REPEATED FOR EACH HYDROCARBON FILLING OR WORKING LOSS AND SPILLAGE SITE USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1, DATA SET 21.

SOURCE INVENTORY DATA SET 22 - HYDROCARBON BREATHING LOSS SITES (FROM PETROLEUM STORAGE TANKS)

Hydrocarbon breathing losses occur in storage tanks due to the diurnal temperature variation. Daytime heating of fuel storage tanks causes increased internal pressure. This pressure is relieved by venting the excess fuel vapor to the atmosphere. It is assumed that hydrocarbon breathing loss sites contain either fixed roof or floating roof tanks. A different set of cards are input according to the type of roof in that particular area. Card Set 1 is used to define areas containing fixed roof tanks. Card Set 2 defines floating roof tanks.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of hydrocarbon breathing loss areas to be described.

NOTE: If this value is zero, skip to the next data set.

INPUT CARD SET 1 IF THIS SOURCE CONTAINS FIXED ROOF TANKS. INPUT CARD SET 2 IF IT CONTAINS FLOATING ROOF TANKS.

CARD SET NUMBER 1 (Input for Fixed Roof Tanks)

CARD1 OF CARD SET 1 FORMAT(4I4,4F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area defined in Data Set 20.
8	-	Identification number of fuel type used at this site (choose from table 9).
12	-	Roof identifier (punch a 1).
13-16	-	Total number of fixed roof fuel tanks in this area with the same average diameter.
17-24	meters	Average diameter of the fuel tanks in this area
25-32	-	Paint factor for the tanks in this area (if left blank, a value of 1.2 will be used).

33-40	-	Tank diameter factor (if left blank, a value of 1.0 will be used).
41-48	meters	Average height of the vapor space above the liquid for tanks in this area.

CARD SET NUMBER 2 (Input for Floating Roof Tanks)

CARD 1 OF CARD SET 2 FORMAT(4I4,4F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
8	-	Identification number of the fuel type used at this site (choose from table 9).
12	-	Roof identifier (code a 2 in Column 12).
13-16	-	Total number of floating roof fuel tanks in this area with the same average diameter.
17-24	meters	Average diameter of the fuel tanks in this area.
25-32	-	Paint factor (if left blank, a value of 1.0 will be used).
33-40	-	Seal factor (if left blank, a value of 1.0 will be used).
41-48	-	Rivet factor (if left blank, a value of 0.1 will be used).

EITHER CARD SET 1 OR CARD SET 2 IS PUNCHED FOR EACH HYDROCARBON BREATHING LOSS SITE ON THIS BASE AND THE TOTAL NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 22.

SOURCE INVENTORY DATA SET 23 - HYDROCARBON BREATHING LOSSES (PETROLEUM TANK TRUCK PARKING AREAS)

Petroleum products are usually transferred from one area to another in large tank trucks. When these trucks are parked, the diurnal heating of the vapor space above the liquid in the tank is forced out into the atmosphere. The areas where these trucks are parked are described in this data set and this information is used to calculate the total hydrocarbon emissions on this base.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of tank truck parking areas to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(3I4,4X,3F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
8	-	Identification number of the fuel type used by the tank trucks in this area (choose from table 9).
9-12	-	Total number of tank trucks parked in this area.
17-24	kl	Average tank capacity of trucks parked in this area.
25-32	fraction	Average amount of the tank filled.
33-40	meters	Average diameter of the tanks.

THIS CARD IS REPEATED FOR EACH TANK TRUCK PARKING AREA ON THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1.

SOURCE INVENTORY DATA SET 24 - HYDROCARBON BREATHING LOSSES (FROM MILITARY AND CIVILIAN PARKING AREAS)

The vapor space in the tanks of parked civilian and military motor vehicles is heated throughout the day, thus causing increased vapor pressure within the tank. The pressure is relieved by allowing the excess fuel vapor to breathe into the atmosphere. The parking areas where these breathing losses occur are described in this data set.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of military and civilian parking and civilian parking access to be described (sum of military plus civilian parking areas).

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(3I4,4X,2F8.2)

card columns	unit	definition
1-4	-.	Four-digit source indentification number. It must correspond to an area ID defined in Data Set 20.
8	-	Identification number of the fuel used by the vehicles in this area (choose from table 9).
9-12	-	Total number of civilian and military vehicles parked in this area.
17-24	liters	Average tank capacity of the vehicles parked in this area.
25-32	fraction	Average amount each vehicle tank is filled.

THIS CARD IS REPEATED FOR EACH MOTOR VEHICLE PARKING AREA ON THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 24.

SOURCE INVENTORY DATA SET 25 - OTHER EVAPORATIVE HYDROCARBON AREA SOURCES

This data set is used to describe evaporative hydrocarbon sources that cannot be accurately described in Data Sets 21 through 24. The total hydrocarbon emissions for these areas are hand calculated and input in this data set.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of other evaporative hydrocarbon sources to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(I4,4X,F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
9-10	metric ton/yr	Total evaporative hydrocarbon emission from this source.

THIS CARD IS REPEATED FOR EACH "OTHER" EVAPORATIVE HYDROCARBON SITE ON THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 25.

SOURCE INVENTORY DATA SET 26 - SPACE HEATING AREA SOURCES

Space heating sources refer mainly to areas which contain many small individual space heating units. In most instances these heating units are found in residential areas.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of space heating sources to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,3F8.2,I4)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
8	-	Emission factor identification number (choose from table 6).
9-16	percent	Average amount of sulfur in the fuel burned at this source.
17-24	percent	Average amount of ash in the fuel burned at this source.
25-32	see table 6 determine units	Average annual consumption of the fuel used at this source.*

*The units are determined in table 6. Code the input value in the units corresponding to the emission factor identification number

36	-	Value indicating if any pollutants are controlled at this source. Punch a 1 if some or all are controlled. Punch a 0 if no pollutants are controlled.

NOTE: Card 3 is input if the value in Column 36, Card 2 is 1.

CARD NUMBER 3 FORMAT(2I4,6(I4,F4.3)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2.
8	-	Number of pollutants controlled.
9-56	-	The pollutant ID number and the fraction it is controlled is input for the pollutant which are controlled. The pollutant ID can be found in table 7. The pollutant ID and the fraction it is controlled are punched together; that is, Columns 9-12 would contain the ID of the first pollutant controlled and Columns 13-16 would contain the fraction it is controlled. Columns 17-20 would contain the ID of the second pollutant controlled and Columns 21-24 would contain the fraction it is controlled, etc., to Column 56.

CARDS 2 AND 3 (IF APPLICABLE) ARE PUNCHED TOGETHER. THIS (THESE) CARD(S) MUST BE REPEATED FOR EACH SPACE HEATING SITE ON THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 26.

SOURCE INVENTORY DATA SET 27 - OFF-ROAD VEHICLE AREA SOURCES

Off-road vehicles are military diesel-powered vehicles which operate off the main roadways. The area where these types of vehicles operate is determined and the total fuel consumption for all vehicles in the area is hand calculated. This calculated value is input in this data set.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of off-road vehicle areas to be described.

NOTE: *If this value is zero, skip to the next data set.*

CARD NUMBER 2 FORMAT(I4,4X,2F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
9-16	1000 gal/yr	Total amount of diesel consumed at this area.
17-24	mpg	Diesel consumption rate (if left blank, a value of 3.0 will be used).

THIS CARD IS REPEATED FOR EACH OFF-ROAD VEHICLE AREA ON THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE IN CARD 1, DATA SET 27.

SOURCE INVENTORY DATA SET 28 - MILITARY MOTOR VEHICLE AREA SOURCES

Military vehicle area sources consist of areas on the airbase predominated by military vehicles (motor pool, flight line, etc.). If military vehicles are intermixed with civilian vehicles in a parking area, the area is defined as a military area in this data set with only military vehicles defined and also as a civilian area with only civilian vehicles defined.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of military vehicle area sources to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,7F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 20.
8	-	Vehicle emission factor identifier for calculation of military vehicle emissions in this area (choose from table 11).
9-16	mph	Average speed of military vehicles in this area.
17-64	1000 m/yr	Vehicle miles for military vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 17-24; the value for the second vehicle class is punched in Columns 25-32, etc., to Column 64.

NOTE: Cards 3 and 4 <u>are not</u> input if the value in Column 8, Card 2, is a 1 or a 2. Input the following cards only if the value is 3.

CARD NUMBER 3 FORMAT(7I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.

8-24	1000/yr	Number of cold starts for military vehicles in each of the six vehicle classes (table 4). The value for the first vehicle class is punched in Columns 8-12, the second class is punched in Columns 13-16, etc., to Column 24.

CARD NUMBER 4 FORMAT(2I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.
5-8	1000/yr	Number of hot soaks occurring in all military vehicle classes.

CARDS 2, 3, AND 4 ARE INPUT TOGETHER (CARDS 3 AND 4 ARE INCLUDED IF APPLICABLE) AND REPEATED FOR EACH MILITARY VEHICLE AREA ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 28.

SOURCE INVENTORY DATA SET 29 - CIVILIAN MOTOR VEHICLE AREA SOURCES

Civilian vehicle area sources consist of areas on the airbase predominated by civilian vehicles (base housing, base parking areas, etc.). If civilian vehicles are intermixed with military vehicles in a parking area, the area is defined as a civilian area in this data set with only civilian vehicles defined and also as a military vehicle area with only military vehicles defined.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of civilian vehicle area sources to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,7F8.2)

card columns	unit	definition
1-4	-	*Four-digit source ID number. It must* correspond to an area ID defined in Data Set 30.
8	-	Vehicle emission factor identifier for calculation of civilian vehicle emissions in this area (choose from table 11).
9-16	mph	Average speed of civilian vehicles in this area.
17-64	1000 m/yr	Vehicle miles for civilian vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 17-24; the value for the second vehicle class is punched in Columns 25-32, etc., to Column 64.

NOTE: Cards 3 and 4 are not input if the value in Column 8, Card 2, is a 1 or a 2. Input the following cards only if the value is 3.

CARD NUMBER 3 FORMAT(7I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.

5-28	1000/yr	Number of cold starts for civilian vehicles in each of the six vehicle classes (table 4). The value for the first vehicle class is punched in Columns 5-8; the second class is punched in Columns 8-12, etc., to Column 28.

CARD NUMBER 4 FORMAT(2I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.
5-8	1000/yr	Number of hot soaks occurring in all civilian vehicle classes.

CARDS 2, 3, AND 4 ARE PUNCHED TOGETHER (CARDS 3 AND 4 ARE INCLUDED IF APPLICABLE) AND REPEATED FOR EACH CIVILIAN VEHICLE AREA ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 29.

SOURCE INVENTORY DATA SET 30 - AIRBASE LINE SOURCE GEOMETRIES

The physical geometries for each line source in this airbase are defined in this data set. Each line source must be defined by describing an X and Y coordinate location at both ends. Additionally, each line is assigned an identification number. This number will be used in Data Sets 31 through 33 when defining the emissions from each particular line source.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of airbase line sources on this airbase (maximum of 150).

NOTE: If the total number of airbase line sources is zero, Data Sets 31 through 33 are not punched. If the total number of lines is greater than zero, Data Sets 31 through 33 must be punched.

CARD NUMBER 2 FORMAT(I4,4X,8F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined. This ID will be used in future data sets whenever this line is referenced.
9-16	km	X coordinate at one end of source.
17-24	km	Y coordinate at one end of source.
25-32	meters	Average height of the emissions above the ground at this end of the line.
33-40	meters	Width of this line (if left blank, a value of 10.0 will be used).
41-48	meters	Initial vertical dispersion parameter (if left blank, a value of 2.0 will be used).
49-56	km	X coordinate at opposite end of source.
57-64	km	Y coordinate at opposite end of source.
65-72	km	Average height of the emissions above the ground at this end of the line.

THIS CARD IS REPEATED FOR EACH LINE SOURCE AT THIS AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 30.

SOURCE INVENTORY DATA SET 31 - MILITARY MOTOR VEHICLE LINE SOURCES

Military vehicle line sources consist of roadways on the airbase predominated by military vehicles. If military vehicles are intermixed with civilian vehicles on a particular roadway, this roadway is defined as a military line source in this data set with only the military vehicles defined and also as a civilian line source with only civilian vehicles defined.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of military vehicle line sources to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,7F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 30.
8	-	Vehicle emission factor identifier for military vehicle on this line (choose from table 11).
9-16	mph	Average speed of military vehicles on this line.
17-64	1000 m/yr	Vehicle miles for military vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 17-24; the value for the second class is punched in Columns 25-32, etc., to Column 64.

NOTE: Cards 3 and 4 are not included if the value in Column 8, Card 2, is a 1 or a 2. Input the following cards only if the value is 3.

CARD NUMBER 3 FORMAT(7I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.

5-28	1000/yr	Number of cold starts for military vehicles in each of the six vehicle classes (table 4). The value for the first vehicle class is punched in Columns 5-8, the second class is punched in Columns 9-12, etc., to Column 28.

CARD NUMBER 4 FORMAT(2I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.
5-8	1000/yr	Number of hot soaks occurring on this military vehicle line.

CARDS 2, 3, AND 4 ARE PUNCHED TOGETHER (DARDS 3 AND 4 ARE INCLUDED IF APPLICABLE) AND REPEATED FOR EACH MILITARY VEHICLE LINE ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 31.

SOURCE INVENTORY DATA SET 32 - CIVILIAN MOTOR VEHICLE LINE SOURCES

Civilian vehicle line sources consist of roadways on the airbase predominated by civilian vehicles. If civilian vehicles are intermixed with military vehicles on a particular roadway, this roadway is defined as a civilian line source in this data set with only the civilian vehicles described and also as a military line source with only military vehicles defined.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of civilian vehicle line sources to be described.

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,7F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 30.
8	-	Vehicle emission factor identifier for civilian vehicle on this line (choose from table 11).
9-16	mph	Average speed of civilian vehicles on this line.
17-64	1000 m/yr	Vehicle miles for civilian vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 4--24; the value for the second class is punched in Columns 25-32, etc., to Column 64.

NOTE: Cards 3 and 4 are not included if the value in column 8 is 1 or 2. Input the following cards only if the value is 3.

CARD NUMBER 3 FORMAT(7I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.

4-28	1000/yr	Number of cold starts for civilian vehicles in each of the six vehicle classes (table 4). The value for the first vehicle class is punched in Columns 4-8; the second class is punched in Columns 8-12, etc., to Column 28.

CARD NUMBER 4 FORMAT(2I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to source ID in Card 2.
5-8	1000/yr	Number of hot soaks occurring on this civilian vehicle line.

CARDS 2,3, AND 4 ARE PUNCHED TOGETHER (CARDS 3 AND 4 ARE ALWAYS CODED TOGETHER AND INCLUDED IF APPLICABLE) AND REPEATED FOR EACH CIVILIAN VEHICLE LINE ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 32.

SOURCE INVENTORY DATA SET 33 - OTHER NONAIRCRAFT LINE SOURCES

This data set is used to define line sources on the airbase which cannot be defined in any of the above line source categories. The total annual emission for each pollutant must be hand calculated for each source in this category. These hand calculated emissions are then input in this data set.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of other nonaircraft line sources to be defined.

CARD NUMBER 2 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number. It must correspond to an area ID defined in Data Set 30.
9-16	metric tons/yr	Emission of carbon monoxide at this source.
17-24	metric tons/yr	Emission of hydrocarbon at this source.
25-32	metric tons/yr	Emission of nitrogen oxide at this source.
33-40	metric tons/yr	Emission of particulates at this source.
41-48	metric tons/yr	Emission of sulfur oxides at this source.

CARD 2 IS REPEATED FOR EACH "OTHER" AIRBASE LINE SOURCE USED AT THIS BASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 33.

SOURCE INVENTORY DATA SET 34 - ENVIRON POINT SOURCES

Environ point sources are point sources in the area surrounding but not including the airbase. This information is used if a comparison is being made of the pollution from the airbase with the pollution from the surrounding area.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of environ point sources to be defined (maximum of 100).

NOTE: If this value is zero, skip to the next data set.

CARD NUMBER 2 FORMAT(2I4,9F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined. Plume rise formula ID (choose from table 5).
9-16	km	X coordinate at the source center.
17-24	km	Y coordinate at the source center.
25-32	meters	Height of the exhaust stack above surrounding ground level.
33-40	meters	Initial horizontal dispersion parameter.
41-48	meters	Initial vertical dispersion parameter.
49-56	°Kelvin	Temperature of the gas at the exit of the exhaust stack.
57-64	m/sec	Velocity of the gas at the exit of the exhaust stack.
65-72	meters	Diameter of the exhaust stack.
73-80	meters	Height of the building (not including the exhaust stack) above the ground.

CARD NUMBER 3 FORMAT(I4,4X, 5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2.

9-16	metric tons/yr	Emissions of carbon monoxide at this source.
17-24	metric tons/yr	Emissions of hydrocarbons at this source.
25-32	metric tons/yr	Emissions of nitrogen oxides at this source.
33-40	metric tons/yr	Emissions of particulates at this source.
41-48	metric tons/yr	Emissions of sulfur oxides at this source.

CARDS 2 AND 3 ARE PUNCHED TOGETHER AND REPEATED FOR EACH ENVIRON POINT SOURCE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 34.

SOURCE INVENTORY DATA SET 35 - ENVIRON AREA SOURCES

Environ area sources are sources in the area surrounding but not including the airbase. Environ areas may be input according to one of four options. Corresponding to each option is an input card set. For each source category an option is chosen and a corresponding card set is input. For example, if option 2 is chosen, Card Set 2 is used for input of all environ area sources and Card Sets 1 and 3 are ignored. If option zero is chosen, it is assumed that there are no environ area sources to be defined and the user would advance to the next data set. An area source must be defined as a square and situated such that a line parallel with the right and left sides will be situated north-south.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
4	-	Option identifier indicating which card set will be input (choose from table 12).

NOTE: If this value is zero, skip to the next data set.

CARD SET NUMBER 1 (Environ Stationary and Mobile Areas)

NOTE: The sum of all stationary and mobile land use areas must not exceed 100.

CARD 1 OF CARD SET 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of environ stationary area sources to be defined.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
9-16	km	X coordinate at the center of this stationary source.
17-24	km	Y coordinate at the center of this stationary source.

25-32	meters	Average height of the emissions at this stationary source above the surrounding area (no default value).
33-40	meters	Length of a side of the square used to represent this stationary source.
41-48	meters	Initial horizontal dispersion parameter for this stationary source (if left blank, a value of 8.0 will be used).

CARD 3 OF CARD SET 1 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2 of Card Set 1.
9-16	metric tons/yr	Emission of carbon monoxide at this stationary source.
17-24	metric tons/yr	Emission of hydrocarbons at this stationary source.
25-32	metric tons/yr	Emission of nitrogen oxides at this stationary source.
33-40	metric tons/yr	Emission of particulates at this stationary source.
41-48	metric tons/yr	Emission of sulfur oxides at this stationary source

CARDS 2 AND 3 OF CARD SET 1 ARE PUNCHED TOGETHER AND MUST BE REPEATED FOR EACH ENVIRON STATIONARY SOURCE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1 OF CARD SET 1.

CARD 4 OF CARD SET 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of environ mobile area sources to be defined.

CARD 5 OF CARD SET 1 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.

9-16	km	X coordinate at the center of this mobile source.
17-24	km	Y coordinate at the center of this mobile source.
25-32	meters	Average height of the emissions above ground at this mobile source.
33-40	meters	Length of a side of the square used to represent this mobile source.
41-48	meters	Initial horizontal dispersion parameter for this mobile source (if left blank, a value of 2.0 will be used).

CARD 6 OF CARD SET 1 FORMAT(2I4,7F8.2

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 5 of Card Set 1.
8	-	Vehicle emission factor identifier for vehicles in this mobile area source (choose from table 11).
9-16	mph	Average speed of vehicles in this mobile area.
17-64	1000 m/yr	Vehicle miles for mobile source vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 17-24; the value for the second class is punched in Columns 25-26, etc., to Column 64.

CARDS 7 AND 8 OF CARD SET 1 ARE NOT INCLUDED IF THE VALUE IN COLUMN 8, CARD 6, IS 1 OR 2. INPUT THE FOLLOWING CARDS ONLY IF THE VALUE IS 3.

CARD 7 OF CARD SET 1 FORMAT(7I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 5 of Card Set 1.

4-28	1000/yr	Number of cold starts for mobile source vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 4-8; the second class is punched in Columns 9-12, etc., to Column 28.

CARD 8 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 5 of Card Set 1.
5-8	1000/yr	Total number of hot soaks occurring in this mobile area.

CARDS 5, 6, 7, AND 8 OF CARD SET 1 ARE PUNCHED TOGETHER (CARDS 7 AND 8 ARE INCLUDED IF APPLICABLE) AND REPEATED FOR EACH ENVIRON MOBILE AREA ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 4 OF CARD SET 1.

CARD SET NUMBER 2

CARD 1 OF CARD SET 2 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of area sources to be defined with EPA land use categories (see table 13) (maximum of 100).

CARD 2 OF CARD SET 2 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
9-16	km	X coordinate at the center of this land use area.
17-24	km	Y coordinate at the center of this land use area.
25-32	meters	Average height above ground of the emissions at this source.
33-40	meters	Length of a side of the square used to represent this land use area.

41-48	meters	Initial horizontal dispersion parameter for this stationary source (if left blank, a value of 8.0 will be used).

CARD 3 OF CARD SET 2 FORMAT(I4,4X,8F8.7)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2 of Card Set 2.
9-72	fraction	Portion of this area in each of the eight land use categories (see table 13).* The portion of this area categorized in land use category 1 is punched in Columns 9-16; the portion in category 2 is punched in Columns 17-24, etc., to Column 72.

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*An area can be made up of several land use categories. For example, a particular area could be defined as being 0.30 urban (land use category 2) and 0.70 suburban (land use category 3). The fractions must sum to 1.0.

CARDS 2 AND 3 OF CARD SET 2 ARE PUNCHED TOGETHER AND ARE REPEATED FOR EACH ENVIRON LAND USE AREA AND THE NUMBER OF REPETITIONS MUST EQUAL THE VALUE PUNCHED IN CARD 1 OF CARD SET 2.

CARD SET NUMBER 3 (Environ Combined Areas)

CARD 1 OF CARD SET 3 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of combined environ area sources to be defined for which total emissions for each pollutant have been hand calculated (maximum of 100).

CARD 2 OF CARD SET 3 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
9-16	km	X coordinate at the center of this environ area.

17-24	km	Y coordinate at the center of this environ area.
25-32	meters	Average height of the emission above ground at this environ area site.
33-40	meters	Length of a side of the square used to represent this area.
41-48	meters	Initial horizontal dispersion parameter for this stationary source (if left blank, a value of 8.0 will be used).

CARD 3 OF CARD SET 3 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2 of Card Set 3.
9-16	metric tons/yr	Emission of carbon monoxide at this environ area source.
17-24	metric tons/yr	Emission of hydrocarbons at this environ area source.
25-32	metric tons/yr	Emission of nitrogen oxides at this environ area source.
33-40	metric tons/yr	Emission of particulates at this environ area source.
41-48	metric tons/yr	Emission of sulfur oxides at this environ area source.

CARDS 2 AND 3 OF CARD SET 3 ARE INPUT TOGETHER AND MUST BE REPEATED FOR EACH ENVIRON AREA SOURCE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1 OF CARD SET 3.

SOURCE INVENTORY DATA SET 36 - ENVIRON ROADWAY LINE SOURCES

Environ roadway line sources consist of off-base civilian roadways in the vicinity of the airbase.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of environ roadway line sources to be defined.

NOTE: If this value is zero, skip to the next data set. The sum of environ roadway lines must not exceed 20.

CARD NUMBER 2 FORMAT(I4,4X,8F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
9-16	km	X coordinate at one end of this line source.
17-24	km	Y coordinate at one end of this line source.
25-32	meters	Average height of the emissions above the ground at this end of the line.
33-40	meters	Width of this roadway line (if left blank, a value of 10.0 will be used).
41-48	meters	Initial vertical dispersion parameter (if left blank, a value of 2.0 will be used).
49-56	km	X coordinate at the opposite end of this line source.
57-64	km	Y coordinate at the opposite end of this line source.
65-72	meters	Average height of the emissions above ground at this end of the line.

CARD NUMBER 3 FORMAT(2I4,7F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is identical to the source ID in Card 2.
8	-	Vehicle emission factor identifier for vehicles on this line (choose from table 11).
9-16	mph	Average speed of military vehicles on this line.
17-64	1000/yr	Vehicle miles for vehicles in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 17-24; the value for the second class is punched in Columns 25-32, etc., to Column 64.

CARDS 4 AND 5 OF DATA SET 36 ARE NOT INCLUDED IF THE VALUE IN COLUMN 8, CARD 3, IS 1 OR 2. INPUT THE FOLLOWING CARDS ONLY IF THE VALUE IS 3.

CARD NUMBER 4 FORMAT(7I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2.
5-28	1000/yr	Number of cold starts for vehicles on this roadway line in each of the six vehicle classes (see table 4). The value for the first vehicle class is punched in Columns 5-8; the second class is punched in Columns 9-12, etc., to Column 28.

CARD NUMBER 5 FORMAT(2I4)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2.
5-8	1000/yr	Total number of hot soaks occurring on this roadway line.

CARDS 2, 3, 4, AND 5 ARE INPUT TOGETHER (CARDS 4 AND 5 ARE INCLUDED IF APPLICABLE) AND REPEATED FOR EACH ENVIRON ROADWAY LINE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE IN CARD 1, DATA SET 36.

SOURCE INVENTORY DATA SET 37 - ENVIRON NONROADWAY LINE SOURCES

Environ nonroadway lines consist of off-base line sources other than roadways.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
1-4	-	Total number of environ nonroadway line sources to be defined.

NOTE: If this value is zero, source inventory input is complete. The sum of environ roadway lines and nonroadway lines must not exceed 20.

CARD NUMBER 2 FORMAT(I4,4X,8F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which is larger than the previous airbase or environ ID defined.
9-16	km	X coordinate at one end of this line source.
17-24	km	Y coordinate at one end of this line source.
25-32	meters	Average height of the emissions above the ground at this end of the line.
33-40	meters	Width of this nonroadway line (if left blank, a value of 10.0 will be used).
41-48	meters	Initial vertical dispersion parameters (if left blank, a value of 2.0 will be used).
49-56	km	X coordinate at opposite end of this line source.
57-64	km	Y coordinate at opposite end of this line source.
65-72	meters	Average height of the emissions above the ground at this end of the line.

CARD NUMBER 3 FORMAT(I4,4X,5F8.2)

card columns	unit	definition
1-4	-	Four-digit source ID number which must be identical to the source ID in Card 2.
9-16	metric tons/yr	Emission of carbon monoxide at this environ line source.
17-24	metric tons/yr	Emission of hydrocarbons at this environ line source.
25-32	metric tons/yr	Emission of nitrogen oxides at this environ line source.
33-40	metric tons/yr	Emission of particulates at this environ line source.
41-48	metric tons/yr	Emission of sulfur oxides at this environ line source.

CARDS 2 AND 3 ARE PUNCHED TOGETHER AND MUST BE REPEATED FOR EACH ENVIRON NON-ROADWAY LINE SOURCE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN CARD 1, DATA SET 37.

SECTION V

SHORT-TERM DISPERSION INPUT DATA

The input data to the short-term dispersion model consist of both formatted cards and a magnetic tape or disk file created in a source inventory run. The formatted card input data sets are numbered and grouped in categories and are listed in table 14. These card data are used to describe the time and meteorological conditions of the period to be modelled as well as the receptor locations on the airbase for which predicted concentrations will be calculated. In addition, the temporal activity distributions for airbase stationary and environ sources are defined.

The file created by the source inventory code contains a summary of total emissions occurring on the airbase under study. Also it describes the temporal activity of all aircraft and airbase mobile sources. This file must be included as part of the input data for every short-term dispersion run.

SHORT-TERM DATA SET 1 - TITLE INFORMATION

This data set provides data to be used for labeling the short-term output in large block letters. The labeling consists of four lines of block letters, each approximately 1 inch high. The label is centered horizontally and vertically on the page.

The character set is made up of alphanumeric characters and a blank. The first two lines are used by the program to print the words AQAM and SHORT TERM. The next two lines consist of characters specified in cards 1 and 2 of this data set.

CARD NUMBER 1 FORMAT(12A1)

card columns	unit	definition
1-12	-	Characters to appear in the third line of "Block Letter" title (characters are left justified).

CARD NUMBER 2 FORMAT(12A1)

card columns	unit	definition
1-12	-	Characters to appear in the fourth line of "Block Letter" title (characters are left justified in the field).

SHORT-TERM DATA SET 2 - GENERAL PROBLEM DESCRIPTION

The information in this data set is used to determine the titling information for the printed matrix of pollutant concentrations, the structure of the grid of receptors, and the time segments to be modelled.

CARD NUMBER 1 FORMAT(80A1)

card columns	unit	definition
1-80	-	Description of this problem. This description will appear at the head of the tables used to display the predicted concentrations.

CARD NUMBER 2 FORMAT(I6,A8)

NOTE: The source inventory code can be altered to allow an extra pollutant to be calculated. If the source inventory has not been so altered, this card is included but left blank and the user proceeds to the next card.

card columns	unit	definition
6	-	Extra pollutant indicator. Punch a 1 if there is to be an extra pollutant printed.
7-14	-	Name to describe this extra pollutant.

CARD NUMBER 3 FORMAT(5I6)

card columns	unit	definition
1-30	-	Pollutant ID numbers defining the pollutants for which predictions are to be printed (choose IDs from table 7). Columns 1-6 contain the ID for the first pollutant to be printed; Columns 7-12 contain the ID for the second, etc., to Column 30.

CARD NUMBER 4 FORMAT(I6,6F6.0)

card columns	unit	definition
1-6	-	Total number of special wind cases to be defined (this must agree with the number of special wind cases defined in the source inventory of this base).

7-42	degrees from north (clockwise), knots	The wind directions and its associated wind speed which define a special case are input together. That is, Columns 7-12 would contain the wind direction to define special case 1 and Columns 13-18 would contain the wind speed to define special case 1; Columns 19-24 contain the wind directions for case 2 and Columns 25-30 contain the wind speed for this case, etc., to Column 42 (see appendix C).

CARD NUMBER 5 FORMAT(2F8.0,2I8,F8.0)

card columns	unit	definition
1-8	km	X coordinate of the lower left-hand corner of the receptor grid.
9-16	km	Y coordinate of the lower left-hand corner of the receptor grid.
17-24	-	Number of columns in the grid of the receptors.
25-32	-	Number of rows in the grid of the receptors.
33-40	km	Spacing between the rows and columns* (spacing between rows and columns is equal).

*A receptor grid size is determined by multiplying the number of rows times the number of columns and adding to this the number of special receptors. The total grid size must not exceed 312.

CARD NUMBER 6 FORMAT(I6)

card columns	unit	definition
1-6	-	Total number of special receptors (receptors specifically defined off the grid).

IF THE TOTAL NUMBER OF OFF GRID RECEPTORS IS ZERO, CARD 7 IS NOT INPUT. INPUT CARD 7 ONLY IF THE TOTAL NUMBER OF SPECIAL RECEPTORS IS GREATER THAN ZERO. CARD NUMBER 8 IS INPUT REGARDLESS OF THE NUMBER OF SPECIAL RECEPTORS.

CARD NUMBER 7 FORMAT(2F8.0)

card columns	unit	definition
1-8	km	X coordinate of this off-grid receptor.
9-16	km	Y coordinate of this off-grid receptor.

THIS CARD IS REPEATED FOR EACH SPECIAL RECEPTOR LOCATION ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE IN CARD NUMBER 6 OF THIS DATA SET.

CARD NUMBER 8 FORMAT(3I6)

card columns	unit	definition
1-6	-	Number of statistical receptors defined. Punch a 0 if none are defined.

NOTE: If this value is zero, the remainder of the card is left blank and user proceeds to Card Number 10.

7-12	-	Logical unit to be used to write the statistical tape (punch a 25).
13-16	-	Indicator defining whether the statistical tape is being created during this run (new) or if data is being added to a previous one (old). Punch a 1 for new, 0 for old.

CARD NUMBER 9 FORMAT(2F8.0)

card columns	unit	definition
1-8	km	X coordinate for statistical receptor.
9-16	km	Y coordinate for statistical receptor.

THIS CARD IS REPEATED FOR EACH STATISTICAL RECEPTOR ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 1-6 OF CARD 8.

CARD NUMBER 10 FORMAT(3I6,F6.0)

card columns	unit	definition
1-6	-	The ID number of the month in which all periods to be modelled occur (choose from table 15).

7-12	-	The number of days in this month.
17-18	-	The number of different periods to be modeled.*

*A period is defined as a group of consecutive hours within a 24-hour period. A period can be as small as 1 hour and as large as 24 hours. The user may define several different periods during the day and they all must be in the month defined in Columns 1-6.

19-24	°F	Average temperature during this month.

DATA SETS 3 THROUGH 11 MUST BE REPEATED FOR EACH DIFFERENT PERIOD TO BE MODELED AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 17-18 OF CARD NUMBER 9, DATA SET 2.

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AIR QUALITY ASSESSMENT MODEL (AQAM) DATA REDUCTION AND OPERATIO--ETC(U)
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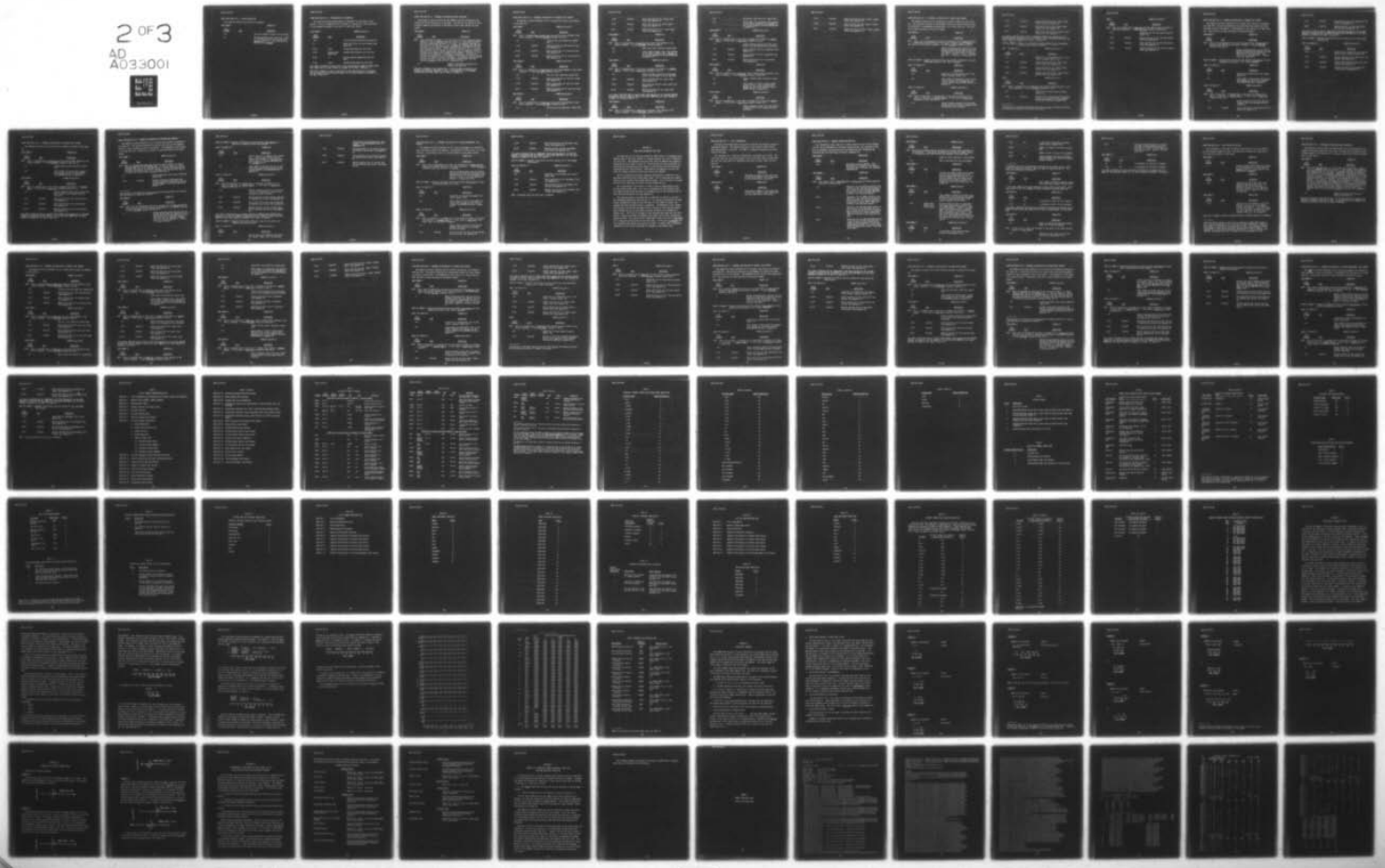

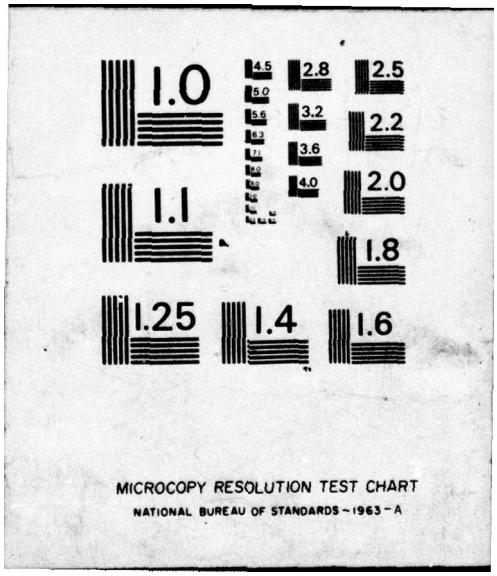
1.0
1.1
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4.0
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

SHORT-TERM DATA SET 3 - PERIOD DEFINITION

This data set defines the period to be modeled.

CARD NUMBER 1 FORMAT(2I6)

card columns	unit	definition
5-6	-	The total number of hours in this period.
12	-	Weekday/weekend period identifier. Punch a 1 if this period is to occur during a weekday; punch a 2 if this period is to occur during a weekend.

SHORT-TERM DATA SET 4 - METEOROLOGICAL INFORMATION

This data set defines meteorological information for each hour in this period. A calm is assumed and wind direction is ignored for a particular hour if the average wind speed is less than 1.0 meter per second.

CARD NUMBER 1 FORMAT(2I6,4F6.0)

card columns	unit	definition
5-6	-	ID for this hour (choose from table 16).
12	-	Stability ID for this hour (choose from table 17).
13-18	m/sec	Average wind speed for this hour.
19-24	degrees from true north	Average wind direction for this hour.
25-30	°F	Average ambient temperature for this hour.
31-36	meters	Average mixing depth for this hour.

THIS CARD IS REPEATED FOR EACH HOUR IN THIS PERIOD AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-6 OF CARD 1, DATA SET 3.

DATA SETS 5 THROUGH 11 MUST BE REPEATED FOR EACH HOUR DEFINED IN THIS PERIOD AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-6 OF CARD 1, DATA SET 3.

SHORT-TERM DATA SET 5 - TEMPORAL DISTRIBUTION INPUT INDICATOR

These data are used to define how the temporal activity distribution for airbase and environ sources are to be input. The user has the option of using a default temporal distribution or defining an hourly distribution for each source.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
3-4	-	Temporal distribution indicator ID (choose from table 18).

NOTE: This value must be either -1 or 0 for the first hour of the time period. However, if for a subsequent hour this value is 1, the temporal distribution for the preceding hour will be used. For example, consider a 6-hour time period from hours 1 to 6. Suppose the distribution indicator for hour 1 is a 0 and the temporal distribution is defined for all airbase and environ sources. If the indicator for hour 2 is a 1, the temporal activity for all sources in this hour will be identical to hour 1. The activity in hour 3 can be redefined by coding an indicator of 0 and defining a new indicator for temporal distribution. If the hours 4 through 6 are defined as 1, the temporal distribution for hour 3 will be used for all sources in hours 4 through 6. The temporal distribution of aircraft activity is read from the source inventory data file and requires *no input* by the user for a dispersion run.

DATA SETS 6 THROUGH 11 ARE PUNCHED ONLY IF FOR THIS HOUR THE VALUE OF THE TEMPORAL DISTRIBUTION INDICATOR IS ZERO. AN EXPLANATION OF THE TEMPORAL DISTRIBUTION FRACTIONAL INPUT CAN BE FOUND IN APPENDIX D.

SHORT-TERM DATA SET 6 - TEMPORAL DISTRIBUTION OF AIRBASE POINT SOURCES

The temporal activity fractions for all airbase point sources are defined in this data set.

CARD NUMBER 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 1 is punched only if there are training fire sites defined in the source inventory. If there are none, proceed to Card 2.

2-4	-	Training fire site identifier (punch 101).
9-16	fraction	Hourly activity for the training fires (see appendix D).
17-24	fraction	Daily activity for all training fires (see appendix D).
25-32	fraction	Monthly activity for all training fires (see appendix D).

CARD NUMBER 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 is punched only if there are test cell sites defined in the source inventory. If there are none, proceed to Card 3.

2-4	-	Test cell site identifier (punch 102).
9-16	fraction	Hourly activity for all test cell sites (see appendix D).
17-24	fraction	Daily activity for all test cell sites (see appendix D).
25-32	fraction	Monthly activity for all test cell sites (see appendix D).

CARD NUMBER 3 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 3 is punched only if there are run-up stand sites defined in the source inventory. If there are none, proceed to Card 4.

2-4	-	Run-up stand site identifier (punch 103).

9-16	fraction	Hourly activity for all run-up stand sites (see appendix D).
17-24	fraction	Daily activity for all run-up stand sites (see appendix D).
25-32	fraction	Monthly activity for all run-up stand sites (see appendix D).

CARD NUMBER 4 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 4 is punched only if there are power plant sites defined in the source inventory. If there are none, proceed to Card 6.

2-4	-	Power plant site identifier (punch 104).
5-8	-	Total number of power plant sites defined in the source inventory which DO NOT use the uniform temporal distribution defined in appendix D.

CARD NUMBER 5 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 5 if punched only if the value in Columns 5-8 of Card 4 is greater than 0. If this value is equal to 0, proceed to Card 6.

1-4	-	Source inventory source ID of the power plant to be assigned activity fractions.
9-16	fraction	Hourly activity for this power plant (see appendix D).
17-24	fraction	Daily activity for this power plant (see appendix D).
25-32	fraction	Monthly activity for this power plant (see appendix D).

THIS CARD IS REPEATED FOR ALL POWER PLANTS WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 4, DATA SET 6.

CARD NUMBER 6 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 6 is punched only if there are incinerator sites defined in the source inventory. If there are none, proceed to Card 8.

2-4	-	Incinerator site identifier (punch 105).
5-8	-	Total number of incinerator sites defined in the source inventory which DO NOT use the uniform temporal distribution defined in appendix D.

CARD NUMBER 7 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 7 is punched only if the value in Columns 5-8 of Card 6 is greater than 0. If this value is equal to 0, proceed to Card 8.

1-4	-	Source inventory source ID of the incinerator to be assigned activity fractions.
9-16	fraction	Hourly activity for this incinerator (see appendix D).
17-24	fraction	Daily activity for this incinerator (see appendix D).
25-32	fraction	Monthly activity for this incinerator (see appendix D).

CARD NUMBER 8 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 8 is punched only if there are "other" airbase points defined in the source inventory. If there are none, proceed to Data Set 7.

2-4	-	"Other" airbase points identifier (punch 107).
5-8	-	Total number of "other" airbase points defined in the source inventory which DO NOT use the uniform temporal distribution defined in appendix D.

CARD NUMBER 9 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 9 is punched only if the value in Columns 5-8 of Card 8 is greater than 0. If this value is equal to 0, proceed to Data Set 7.

1-4	-	Source inventory source ID of the "other" airbase points to be assigned activity fractions.

9-16	fraction	Hourly activity for this "other" airbase point (see appendix D).
17-24	fraction	Daily activity for this "other" airbase point (see appendix D).
25-32	fraction	Monthly activity for this "other" airbase point (see appendix D).

SHORT-TERM DATA SET 7 - TEMPORAL DISTRIBUTION OF AIRBASE AREA SOURCES

The temporal activity of all airbase area sources is defined in this data set. The activity fractions for hydrocarbon sources are input according to one of two options. Corresponding to each option is an input card set. This card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition

NOTE: Card 1 and its appropriate card sets are punched only if there are hydrocarbon area sources defined in the "other" category (Source Inventory Data Set 25) of the source inventory. If there are none, proceed to Card 2.

4	-	Option indicating which card set will be punched to describe the temporal activity distribution for hydrocarbon sources in the "other" category. Punch a 1 to input Card Set 1. Punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Each Hydrocarbon Source in the "Other" Category)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Identifier for hydrocarbon sites in the "other" category (punch 110).
5-8	-	Total number of hydrocarbon sites in the "other" category which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, proceed to Card 2, Data Set 7.

1-4	-	Source inventory source ID of the hydrocarbon site in the "other" category to be assigned activity fractions.

9-16	fraction	Hourly activity for this "other" hydrocarbon site (see appendix D).
17-24	fraction	Daily activity for this "other" hydrocarbon site (see appendix D).
25-32	fraction	Monthly activity for this "other" hydrocarbon site (see appendix D).

THIS CARD IS REPEATED FOR "OTHER" HYDROCARBON SOURCES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Activity Defined for All Hydrocarbon Sources in the "Other" Category)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Identifier for hydrocarbon sites in the "other" category (punch 110).
9-16	fraction	Hourly activity for all "other" hydrocarbon sites (see appendix D).
17-24	fraction	Daily activity for all "other" hydrocarbon sites (see appendix D).
25-32	fraction	Monthly activity for all "other" hydrocarbon sites (see appendix D).

CARD 2 FORMAT(I4,4X,F8.7)

card columns	unit	definition

NOTE: Card 2 is punched only if there are space heating sources defined in the source inventory. If there are none, proceed to Card 3.

2-4	-	Identifier for space heating sources (punch 111).
9-16	fraction	Portion of the total emission from space heaters which use the uniform temporal distribution defined in appendix D.*

*The portion of the space heating emissions which are not distributed uniformly are distributed according to a degree hour method.

CARD 3 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 3 is punched only if there are off-road vehicle sources defined in the source inventory. If there are none, proceed to Data Set 8.

2-4	-	Identifier for off-road vehicle sources (punch 112).
9-16	fraction	Hourly activity for all off-road vehicle sites (see appendix D).
17-24	fraction	Daily activity for all off-road vehicle sites (see appendix D).
25-32	fraction	Monthly activity for all off-road vehicle sites (see appendix D).

SHORT-TERM DATA SET 8 - TEMPORAL DISTRIBUTION OF AIRBASE LINE SOURCES

The temporal activity fractions for all airbase line sources are defined in this data set. The activity fractions for nonaircraft line sources are input according to one of two options. Corresponding to each option is an input card set. This card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition

NOTE: Card 1 and its appropriate card sets are punched only if there are nonaircraft lines defined in the source inventory. If there are none, proceed to Data Set 9.

4	-	Option indicating which card set will be punched to describe the temporal activity distribution for nonaircraft lines. Punch a 1 to input Card Set 1. Punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Each Nonroadway Line Source in the "Other" Category)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Identifier for nonaircraft line sources (punch 117).
5-8	-	Total number of nonaircraft line sources which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, proceed to Data Set 9.

1-4	-	Source inventory source ID of the nonroadway lines to be assigned activity fractions.
9-16	fraction	Hourly activity for this nonaircraft line source (see appendix D).

17-24	fraction	Daily activity for this nonaircraft line source (see appendix D).
25-32	fraction	Monthly activity for this nonaircraft line source (see appendix D).

THIS CARD IS REPEATED FOR ALL NONAIRCRAFT LINES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Activity Defined for All Nonaircraft Line Sources)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Identifier for nonaircraft line sources in the "other" category (punch 117).
9-16	fraction	Hourly activity for all nonaircraft line sources (see appendix D).
17-24	fraction	Daily activity for all nonaircraft line sources (see appendix D).
25-32	fraction	Monthly activity for all nonaircraft line sources (see appendix D).

SHORT-TERM DATA SET 9 - TEMPORAL DISTRIBUTION OF ENVIRON POINT SOURCES

The temporal activity for all environ point sources is defined in this data set.

CARD NUMBER 1 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 1 is punched only if there are environ point sources defined in the source inventory. If there are none, proceed to Data Set 10.

2-4	-	Environ point source identifier (punch 201).
5-8	-	Total number of environ point sources which do not use the uniform temporal distribution defined in appendix D.

CARD NUMBER 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 is punched only if the value in Columns 5-8 of Card 1 is greater than 0. If the value if equal to 0, proceed to Data Set 10.

1-4	-	Source inventory source ID of the environ point source to be assigned activity fractions.
9-16	fraction	Hourly activity for this environ point (see appendix D).
17-24	fraction	Daily activity for this environ point (see appendix D).
25-32	fraction	Monthly activity for this environ point (see appendix D).

THIS CARD IS REPEATED FOR ALL ENVIRON POINT SOURCES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1, DATA SET 9.

SHORT-TERM DATA SET 10 - TEMPORAL DISTRIBUTION OF ENVIRON AREA SOURCES

The temporal activity fractions for all environ area sources are defined in this data set. The activity fractions for environ area land use and combined sources is input according to one of two options. Corresponding to each option is an input card set. A particular card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4,4X,F8.7)

card columns	unit	definition

NOTE: Card 1 is punched and input only if environ option number 1 in Source Inventory Data Set 35 has been defined. If land use (option 2, Source Inventory Data Set 35) or combined (option 3, Source Inventory Data Set 35) areas are defined, skip card 1 and begin this data set with card 2. If there are no area sources, proceed to Data Set 11.

2-4	-	Environ stationary area source identifier (punch 202).
9-16	fraction	Portion of the total emissions from environ stationary sources which use the uniform temporal distribution defined in appendix D.*

*The portions of the emissions which are not distributed uniformly are distributed according to a degree hour method.

CARD NUMBER 2 FORMAT(I4)

card columns	unit	definition

NOTE: Card 2 and its appropriate card set is punched only if there are environ land use areas or environ combined areas defined in the source inventory. If there are none, proceed to Data Set 11.

4	-	Option indicating which card set will be punched to describe the temporal activity distribition for all environ sources in the "land use" or "combined" category. Punch a 1 to input Card Set 1. Punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Land Use or Combined Environ Area Sources)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Environ land use or combined area identifier. (Punch a 203 if this card set defines the activity for land use areas; punch a 204 if it defines the activity for combined areas.)
5-8	-	Total number of environ land use or combined area sources which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, proceed to Data Set 11.

1-4	-	Source inventory source ID of the environ land use or combined area source to be assigned activity fractions.
9-16	fraction	Hourly activity for this environ land use or combined area source (see appendix D).
17-24	fraction	Daily activity for this environ land use or combined area sources (see appendix D).
25-32	fraction	Monthly activity for this environ land use or combined area source (see appendix D).

THIS CARD IS REPEATED FOR ALL ENVIRON LAND USE OR COMBINED AREA SOURCES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Defined for All Environ Land Use or Combined Area Sources Format)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Environ land use or combined area identifier (punch a 203 if this card defines

		the activity for land use areas; punch a 204 if it defines the activity for combined areas.
9-16	fraction	Hourly activity for all environ land use or combined area sources (see appendix D).
17-24	fraction	Daily activity for all environ land use or combined area sources (see appendix D).
25-32	fraction	Monthly activity for all environ land use or combined area sources (see appendix D).

SHORT-TERM DATA SET 11 - TEMPORAL DISTRIBUTION OF ENVIRON NONROADWAY LINE SOURCES

The temporal activity fractions for all airbase nonroadway line sources is input according to one of two options. Corresponding to each option is an input card set. A particular card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition
4	-	Option indicating which card set will be punched to describe the temporal activity distribution for environ nonroadway line sources. Punch a 1 to input Card Set 1. Punch a 2 to input Card Set 2.

NOTE: Card 1 and its appropriate card sets are punched only if there are nonroadway line sources defined in the source inventory. If there are none, fractional input for this hour is complete.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Each Environ Nonroadway Line Source)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Identifier for environ nonroadway line source (punch a 206).
5-8	-	Total number of environ nonroadway line sources which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
1-4	-	Source inventory source ID of the nonroadway line source to be assigned activity fractions.
9-16	fraction	Hourly activity for this environ nonroadway line source (see appendix D).

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, fractional input for this hour is complete.

17-24	fraction	Daily activity for the nonroadway line source (see appendix D).
25-32	fraction	Monthly activity for this nonroadway line source (see appendix D).

THIS CARD IS REPEATED FOR ALL NONROADWAY LINES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Activity Defined for All Nonroadway Line Sources)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Identifier for nonroadway line sources (punch 206).
9-16	fraction	Hourly activity for all nonroadway lines (see appendix D).
17-24	fraction	Daily activity for all nonroadway line sources (see appendix D).
25-32	fraction	Monthly activity for all nonroadway line sources (see appendix D).

NOTE: Fractional input for this hour is complete.

SECTION VI

LONG-TERM DISPERSION INPUT DATA

The input data to the long-term dispersion model consist of formatted cards, magnetic tape or disk file created in a source inventory run, and a climatological data file. The formatted card input data sets are numbered and grouped in categories and are listed in table 19. The card data are used to describe the time period to be modeled and the location on the airbase for which predicted concentrations will be calculated. Additionally, the temporal activity fractions for airbase stationary and environ sources are defined.

The file created by the source inventory code contains a summary of total emissions occurring on the airbase under study. Also it describes the temporal activity of all aircraft and airbase mobile sources. This file must be included as part of the input data for every long-term dispersion run.

The climatological file contains at least 5 years of meteorological data for the airbase under study. This file is created by the Environmental Technical Applications Center and must be included as part of the required data for each long-term dispersion run (see appendix H).

The long-term model is provided with a capability to restart a job which has terminated prematurely (see section II). As execution progresses, the model writes information on tape or disk file that will be needed to restart the program from that particular point in execution. Corresponding to the information written on this file, the model writes a message in the long-term output which informs the user of the value of certain variables to be punched on a restart card. This card is included in the long-term input deck and the information is used by the model to determine the proper area at which calculations should continue. This restart card is described in Data Set 2 and is left blank for a long-term job being run for the first time. If this card is punched, the file containing the restart data must be included. A restart job is submitted identically to an initial job except for changes in the restart card.

LONG-TERM DATA SET 1 - TITLE INFORMATION

This data set provides data to be used for labeling the long-term output in large block letters. The labeling consists of four lines of block letters, each approximately 1 inch high. The label is centered horizontally and vertically on the page.

The character set is made up of alphanumeric characters and a blank. The first two lines are used by the program to print the words AQAM and LONG TERM. The next two lines consist of characters specified in Cards 1 and 2 of this data set.

CARD NUMBER 1 FORMAT(12A1)

card columns	unit	definition
1-12	-	Characters to appear in the third line of the "Block Letter" title (characters are left justified in the field).

CARD NUMBER 2 FORMAT(12A1)

card columns	unit	definition
1-12	-	Characters to appear in the fourth line of the "Block Letter" title (characters are left justified in the field).

LONG-TERM DATA SET 2 - GENERAL PROBLEM DESCRIPTION

The information in this data set is used to determine the titling information for the printed matrix of pollutant concentrations, the structure of the grid of receptors, the time periods to be modeled and the information for restarting the long term from a partially completed run.

CARD NUMBER 1 FORMAT(20A4)

card columns	unit	definition
1-80	-	Description of this problem. This description will appear at the head of the tables used to display the predicted concentration.

CARD NUMBER 2 FORMAT(4I6)

card columns	unit	definition
NOTE: This restart card is left blank for an initial run and punched appropriately for a restarted run.		
5-6	-	Identifier for the PERIOD defined in the vicinity of the long-term grid output at which execution will be continued (must be equal to a restart PERIOD identifier printed in the long-term output).
11-12	-	Identifier for the MONTH defined in the vicinity of the long-term grid output at which execution will be continued (must be equal to a restart MONTH identifier printed in the long-term output).
17-18	-	Identifier for the WIND SPEED defined in the vicinity of the long-term grid output at which execution will be continued (must be equal to a restart WIND SPEED identifier printed in the long-term output).
23-24	-	Identifier for the WIND DIRECTION defined in the vicinity of the long-term grid output at which execution will be continued (must be equal to a restart WIND DIRECTION identifier printed in the long-term output).

CARD NUMBER 3 FORMAT(I6,A8)

card columns	unit	definition

NOTE: The source inventory code can be altered to allow an extra pollutant to be calculated. If the source inventory has not been so altered, Card 3 is included and left blank and the user proceeds to the next card.

6	-	Number of extra pollutants to be printed.
7-14	-	Name to describe this extra pollutant.

CARD NUMBER 4 FORMAT(6I6)

card columns	unit	definition
1-30	-	Pollutant ID numbers defining the pollutants for which predictions are to be printed (choose IDs from table 7). Columns 1-6 contain the ID for the first pollutant to be printed; Columns 7-12 contain the ID for the second, etc., to Column 30.

CARD NUMBER 5 FORMAT(I6,6F6.0)

card columns	unit	definition
1-6	-	Total number of special wind cases to be defined (this must agree with the number of special wind cases defined in the source inventory of this base).
7-42	degree from north (clockwise, knots)	The wind direction and its associated wind speed which define a special case are coded together. Columns 7-12 would contain the wind direction in special case 1 and Columns 13-18 would contain the wind speed in special case 1. Columns 19-24 contain the wind direction for case 2 and Columns 25-30 contain the wind speed for this case, etc., to Column 42.

CARD NUMBER 6 FORMAT(2F8.0,2I8,F8.0)

card columns	unit	definition
1-8	km	X coordinate of the lower left-hand corner of the receptor grid.

9-16	km	Y coordinate of the lower left-hand corner of the receptor grid.
17-24	-	Number of columns in the grid of receptors.
25-32	-	Number of rows in the grid of receptors.
33-40	km	Spacing between the rows and columns* (spacing between rows equals the spacing between columns).

*A receptor grid size is determined by multiplying the number of rows by the number of columns and adding to this the number of special receptors. The total grid size must not exceed 312.

CARD NUMBER 7 FORMAT(I6)

card columns	unit	definition
1-6	-	Total number of special receptors (receptors specifically defined off the grid).

IF THE TOTAL NUMBER OF OFF GRID RECEPTORS IS ZERO, CARD 8 IS NOT INPUT. INPUT CARD 8 ONLY IF THE TOTAL NUMBER OF SPECIAL RECEPTORS IS GREATER THAN ZERO.

CARD NUMBER 8 FORMAT(2F8.0)

card columns	unit	definition
1-8	km	X coordinate of this off grid receptor.
9-16	km	Y coordinate of this off grid receptor.

THIS CARD IS REPEATED FOR EACH SPECIAL RECEPTOR LOCATION ON THE AIRBASE AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE IN CARD NUMBER 7 OF THIS DATA SET.

CARD NUMBER 9 FORMAT(3I6)

card columns	unit	definition
1-6	-	Number of statistical receptors defined. Punch a 0 if none are defined.

NOTE: If this value is zero, the remainder of the card is left blank and Card Number 10 is not punched.

7-12	-	Logical unit to be used to write the statistical tape (punch a 25).

13-16	-	Indicator defining whether the statistical tape is being created during this run (new) or if data is being added to a previous one (old). Punch a 1 for new, 0 for old.

CARD NUMBER 10 FORMAT(2F8.0)

card columns	unit	definition
1-8	km	X coordinate for statistical receptor.
9-16	km	Y coordinate for statistical receptor.

THIS CARD IS REPEATED FOR EACH STATISTICAL RECEPTOR ON THE AIRBASE AND THE NUMBER OF REPETIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 1-6 OF CARD 9.

LONG-TERM DATA SET 3 - TIME PERIOD DEFINITION

The information in this data set defines the period of time to be modeled by the long-term dispersion code. A time period is defined as a combination of a time of day within a given month.

CARD NUMBER 1 FORMAT(I6)

card columns	unit	definition
6	-	Weekday, weekend period identifier (punch a 1 if this period is to occur during a weekday; punch a 2 if this period is to occur during a weekend).

CARD NUMBER 2 FORMAT(7I6)

card columns	unit	definition
1-42	-	Identifier for the time of day to be modeled (choose from table 20). The identifier for the first period is punched in Columns 5-6, the identifier for the second in Columns 11-12, etc., to Column 42.

CARD NUMBER 3 FORMAT(13I6)

card columns	unit	definition
1-78	-	Identifier for the months in which the periods in Card 2 are to be modeled (choose from table 21). The identifier for the first month is punched in Columns 5-6, the identifier for the second in Columns 11-12, etc., to Column 78.*

DATA SETS 4 THROUGH 10 MUST BE REPEATED FOR EACH DIFFERENT PERIOD TO BE MODELED.*

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*The time periods chosen in Card 2 will be modeled for each month chosen in Card 3 and each combination of time period and month constitute a period for which temporal distribution fractions must be input. For example, suppose a user chooses to model two time periods during three different months. This combination of time periods and months constitute six distinct periods to be modeled. Therefore, Data Sets 4 through 10 must be repeated six times.

LONG-TERM DATA SET 4 - TEMPORAL DISTRIBUTION INPUT INDICATOR

These data are used to define how the temporal activity distributions for airbase and environ sources are to be input. The user has the option of using a default temporal distribution for all sources or defining an hourly distribution for each source.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition

NOTE: This value must be either -1 or 0 for the first time period. However, if for a subsequent hour this value is 1, the temporal distribution for the preceding hour will be used. For example, consider six periods for which modeling will be performed. Suppose the distribution indicator for hour 1 is 0 and the temporal distribution is defined for all airbase and environ source. If the indicator for the second period is a 1, the temporal activity for all sources in this period will be identical to period 1. The activity in period 3 can be redefined by coding an indicator of 0 and defining a new temporal distribution. If the indicators for the periods 4 through 6 are defined as 1, the temporal distribution for period 3 will be used for all sources in periods 4 through 6. The temporal distribution of aircraft activity is read from the source inventory data file and requires no input by the user for a dispersion run.

3-4	-	Temporal distribution indicator ID (choose from table 18).

DATA SETS 5 THROUGH 10 ARE PUNCHED ONLY IF, FOR THIS PERIOD, THE VALUE OF THE TEMPORAL DISTRIBUTION INDICATOR IS ZERO. AN EXPLANATION OF THE TEMPORAL DISTRIBUTION FRACTIONAL INPUT CAN BE FOUND IN APPENDIX D.

LONG-TERM DATA SET 5 - TEMPORAL DISTRIBUTION OF AIRBASE POINT SOURCES

The temporal activity fractions for all airbase point sources are defined in this data set.

CARD NUMBER 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 1 is punched only if there are training fire sites defined in the source inventory. If there are none, proceed to Card 2.

2-4	-	Training fire site identifier (punch 101).
9-16	fraction	Hourly activity for the training fires (see appendix D).
17-24	fraction	Daily activity for all training fires (see appendix D).
25-32	fraction	Monthly activity for all training fires (see appendix D).

CARD NUMBER 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 is punched only if there are test cell sites defined in the source inventory. If ther are none, proceed to Card 3

2-4	-	Test cell site identifier (punch 102).
9-16	fraction	Hourly activity for all test cell sites (see appendix D).
17-24	fraction	Daily activity for all test cell sites (see appendix D).
25-32	fraction	Monthly activity for all test cell sites (see appendix D).

CARD NUMBER 3 FORMAT(I4,4X,3F8.8)

card columns	unit	definition

NOTE: Card 3 is punched only if there are run-up stand sites defined in the source inventory. If there are none, proceed to Card 4.

2-4	-	Run-up stand site identifier (punch 103).

9-16	fraction	Hourly activity for all run-up stand sites (see appendix D).
17-24	fraction	Daily activity for all run-up stand sites (see appendix D).
25-32	fraction	Monthly activity for all run-up stand sites (see appendix D).

CARD NUMBER 4 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 4 is punched only if there are power plant sites defined in the source inventory. If there are none, proceed to Card 6.

2-4	-	Power plant site identifier (punch 104).
5-8	-	Total number of power plant sites defined in the source inventory which DO NOT use the uniform temporal distribution defined in appendix D.

CARD NUMBER 5 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 5 is punched only if the value in Columns 5-8 of Card 4 is greater than 0. If this value is equal to 0, proceed to Card 6.

1-4	-	Source inventory source ID of the power plant to be assigned activity fractions.
9-16	fraction	Hourly activity for this power plant (see appendix D).
17-24	fraction	Daily activity for this power plant (see appendix D).
25-32	fraction	Monthly activity for this power plant (see appendix D).

THIS CARD IS REPEATED FOR ALL POWER PLANTS WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 4.

CARD NUMBER 6 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 6 is punched only if there are incinerator sites defined in the source inventory. If there are none, proceed to Card 8.

2-4	-	Incinerator site identifier (punch 105).
5-8	-	Total number of incinerator sites defined in the source inventory which DO NOT use the uniform temporal distribution defined in appendix D.

CARD NUMBER 7 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 7 is punched only if the value in Columns 5-8 of Card 6 is greater than 0. If this value is equal to 0, proceed to Card 8.

1-4	-	Source inventory source ID of the incinerator to be assigned activity fractions.
9-16	fraction	Hourly activity for this incinerator (see appendix D).
17-24	fraction	Daily activity for this incinerator (see appendix D).
25-32	fraction	Monthly activity for this incinerator (see appendix D).

CARD NUMBER 8 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 8 is punched only if there are "other" airbase points defined in the source inventory. If there are none, proceed to Data Set 6.

2-4	-	"Other" airbase points identifier (punch 107).
5-8	-	Total number of "other" airbase points defined in the source inventory which DO NOT use the uniform temporal distribution defined in appendix D.

CARD NUMBER 9 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 9 is punched only if the value in Columns 5-8 of Card 8 is greater than 0. If this value is equal to 0, proceed to Data Set 6.

1-4	-	Source inventory source ID of the "other" airbase points to be assigned activity fractions.

9-16	fraction	Hourly activity for this "other" airbase point (see appendix D).
17-24	fraction	Daily activity for this "other" airbase point (see appendix D).
25-32	fraction	Monthly activity for this "other" airbase point (see appendix D).

LONG-TERM DATA SET 6 - TEMPORAL DISTRIBUTION OF AIRBASE AREA SOURCES

The temporal activity fractions for all airbase area sources are defined in this data set. The activity fractions for hydrocarbon sources are input according to one of two options. Corresponding to each option is an input card set. This card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition

NOTE: Card 1 and its appropriate card sets are punched only if there are hydrocarbon area sources defined in the "other" category of the source inventory. If there are none, proceed to Card 2.

4	-	Option indicating which card set will be punched to describe the temporal activity distribution for hydrocarbon sources in the "other" category. Punch a 1 to input Card Set 1; punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal distribution Activity Defined Individually for Each Hydrocarbon Source in the "Other" Category)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Identifier for hydrocarbon sites in the "other" category (punch 110).
5-8	-	Total number of hydrocarbon sites in the "other" category which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, proceed to Card 2.

1-4	-	Source inventory source ID of the hydrocarbon site in the "other" category to be assigned activity fractions.
9-16	fraction	Hourly activity for this "other" hydrocarbon site (see appendix D).

17-24	fraction	Daily activity for this "other" hydrocarbon site (see appendix D).
25-32	fraction	Monthly activity for this "other" hydrocarbon site (see appendix D).

THIS CARD IS REPEATED FOR ALL POWER PLANTS WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Activity Defined for All Hydrocarbon Sources in the "Other" Category)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Identifier for hydrocarbon sites in the "other" category (punch 110).
9-16	fraction	Hourly activity for all "other" hydrocarbon sites (see appendix D).
17-24	fraction	Daily activity for all "other" hydrocarbon sites (see appendix D).
25-32	fraction	Monthly activity for all "other" hydrocarbon sites (see appendix D)

CARD 2 FORMAT(I4,4X,F8.7)

card columns	unit	definition

NOTE: Card 2 is punched only if there are space heating sources defined in the source inventory. If there are none, proceed to Card 3.

2-4	-	Identifier for space heating sources (punch 111).
9-16	fraction	Portion of the total emission from space heaters which use the uniform temporal distribution defined in appendix D.*

*The portion of the space heating emissions which are not distributed uniformly are distributed according to a degree hour method.

CARD 3 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 3 is punched only if there are off-road vehicle sources defined in the source inventory. If there are none, proceed to Data Set 7.

2-4	-	Identifier for off-road vehicle sources (punch 112).
9-16	fraction	Hourly activity for all off-road vehicle sites (see appendix D).
17-24	fraction	Daily activity for all off-road vehicle sites (see appendix D).
25-32	fraction	Monthly activity for all off-road vehicle sites (see appendix D).

LONG-TERM DATA SET 7 - TEMPORAL DISTRIBUTION OF AIRBASE LINE SOURCES

The temporal activity fractions for all airbase line sources are defined in this data set. The activity fractions for nonroadway line sources are input according to one of two options. Corresponding to each option is an input card set. This card set is input according to the option chosen.

CARD NUMBER 1 FORMAT (I4)

card columns	unit	definition

NOTE: Card 1 and its appropriate card sets are punched only if there are non-aircraft lines defined in the source inventory. If there are none, proceed to Data Set 8.

4	-	Option indicating which card set will be punched to describe the temporal activity distribution for nonaircraft lines. Punch a 1 to input Card Set 1; punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Each Nonaircraft Line Source in the "Other" Category)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Identifier for nonaircraft line sources (punch 117).
5-8	-	Total number of nonaircraft line sources which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, proceed to Data Set 8.

1-4	-	Source inventory source ID of nonaircraft lines to be assigned activity fractions.
9-16	fraction	Hourly activity for this nonaircraft line source (see appendix D).
17-24	fraction	Daily activity for this nonaircraft line source (see appendix D).

25-32	fraction	Monthly activity for this nonaircraft line source (see appendix D).

THIS CARD IS REPEATED FOR ALL NONAIRCRAFT LINES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Activity Defined for All Nonaircraft Line Sources)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Identifier for nonaircraft line sources in the "other" category (punch 117).
9-16	fraction	Hourly activity for all nonaircraft line sources (see appendix D).
17-24	fraction	Daily activity for all nonaircraft line sources (see appendix D).
25-32	fraction	Monthly activity for all nonaircraft line sources (see appendix D).

LONG-TERM DATA SET 8 - TEMPORAL DISTRIBUTION OF ENVIRON POINT SOURCES

The temporal activity for all environ point sources is defined in this data set.

CARD NUMBER 1 FORMAT(2I4)

card columns	unit	definition

NOTE: Card 1 is punched only if there are environ point sources defined in the source inventory. If there are none, proceed to Data Set 9.

2-4	-	Environ point source identifier (punch 201).
5-8	-	Total number of environ point sources which do not use the uniform temporal distribution defined in appendix D.

CARD NUMBER 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 is punched only if the value in Columns 5-8 of Card 1 is greater than 0. If the value is equal to 0, proceed to Data Set 9.

1-4	-	Source inventory source ID of the environ point source to be assigned activity fractions.
9-16	fraction	Hourly activity for this environ point (see appendix D).
17-24	fraction	Daily activity for this environ point (see appendix D).
25-32	fraction	Monthly activity for this environ point (see appendix D).

THIS CARD IS REPEATED FOR ALL ENVIRON POINT SOURCES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1, DATA SET 8.

LONG-TERM DATA SET 9 - TEMPORAL DISTRIBUTION OF ENVIRON AREA SOURCES

The temporal activity fractions for all environ area sources are defined in this data set. The activity fractions for environ area land use and combined sources is input according to one of two options. Corresponding to each option is an input card set. A particular card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4,4X,F8.7)

card columns	unit	definition

NOTE: Card 1 is punched and input only if environ option number 1 in Source Inventory Data Set 35 has been defined. If land use (option 2, Source Inventory Data Set 35) or combined (option 3, Source Inventory Data Set 35) areas are defined, skip Card 1 and begin this data set with Card 2. If there are no area sources, proceed to Data Set 10.

2-4	-	Environ stationary area source identifier (punch 202).
9-16	fraction	Portion of the total emissions from environ stationary sources which use the uniform temporal distribution defined in appendix D.*

*The portions of the emissions which are not distributed uniformly are distributed according to a degree hour method.

CARD NUMBER 2 FORMAT(I4)

card columns	unit	definition

NOTE: Card 2 and its appropriate card set is punched only if there are environ land use areas or environ combined areas defined in the source inventory. If there are none, proceed to Data Set 10.

4	-	Option indicating which card set will be punched to describe the temporal activity distribution for all environ sources in the "land use" or "combined" category. Punch a 1 to input Card Set 1; punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Land Use or Combined Environ Area Sources)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Environ land use or combined area identifier (punch a 203 if this card set defines the activity for land use areas; punch a 204 if it defines the activity for combined areas).
5-8	-	Total number of environ land use or combined area sources which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, proceed to Data Set 10.

1-4	-	Source inventory source ID of the environ land use or combined area source to be assigned activity fractions.
9-16	fraction	Hourly activity for this environ land use or combined area source (see appendix D).
17-24	fraction	Daily activity for this environ land use or combined area source (see appendix D).
25-32	fraction	Monthly activity for this environ land use or combined area source (see appendix D).

THIS CARD IS REPEATED FOR ALL ENVIRON LAND USE OR COMBINED AREA SOURCES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Defined for All Environ Land Use or Combined Area Sources)

CARD 1 OF CARD SET 2 FORMAT(I4,4X,3F8.7)

card columns	unit	definition
2-4	-	Environ land use or combined area identifier (punch a 203 if this card defines the activity for land use areas; punch a 204 if it defines the activity for combined areas).
9-16	fraction	Hourly activity for all environ land use or combined area sources (see appendix D).
17-24	fraction	Daily activity for all environ land use or combined area sources (see appendix D).
25-32	fraction	Monthly activity for all environ land use or combined area sources (see appendix D).

LONG-TERM DATA SET 10 - TEMPORAL DISTRIBUTION OF ENVIRON NONROADWAY LINE SOURCES

The temporal activity fractions for all airbase nonroadway line sources are input according to one of two options. Corresponding to each option is an input card set. A particular card set is input according to the option chosen.

CARD NUMBER 1 FORMAT(I4)

card columns	unit	definition

NOTE: Card 1 and its appropriate card sets are punched only if there are nonroadway line sources defined in the source inventory. If there are none, fractional input for this hour is complete.

4	-	Option indicating which card set will be punched to describe the temporal activity distribution for environ nonroadway line sources. Punch a 1 to input Card Set 1; punch a 2 to input Card Set 2.

CARD SET NUMBER 1 (Temporal Distribution Activity Defined Individually for Each Environ Nonroadway Line Source)

CARD 1 OF CARD SET 1 FORMAT(2I4)

card columns	unit	definition
2-4	-	Identifier for environ nonroadway line source (punch 206).
5-8	-	Total number of environ nonroadway line sources which do not use the uniform temporal distribution defined in appendix D.

CARD 2 OF CARD SET 1 FORMAT(I4,4X,3F8.7)

card columns	unit	definition

NOTE: Card 2 of Card Set 1 is punched only if the value in Columns 5-8 of Card 1 of Card Set 1 is greater than 0. If this value is equal to 0, fractional input for this hour is complete.

1-4	-	Source inventory source ID of the nonroadway line source to be assigned activity fractions.
9-16	fraction	Hourly activity for this environ nonroadway line source (see appendix D).

17-24	fraction	Daily activity for the nonroadway line source (see appendix D).
25-32	fraction	Monthly activity for this nonroadway line source (see appendix D).

THIS CARD IS REPEATED FOR ALL NONROADWAY LINES WHICH DO NOT USE THE UNIFORM TEMPORAL DISTRIBUTION AND THE NUMBER OF REPETITIONS MUST AGREE WITH THE VALUE PUNCHED IN COLUMNS 5-8 OF CARD 1 OF CARD SET 1.

CARD SET NUMBER 2 (Temporal Distribution Activity Defined for All Nonroadway Line Sources)

card columns	unit	definition
2-4	-	Identifier for nonroadway line sources (punch 206).
9-16	fraction	Hourly activity for all nonroadway lines (see appendix D).
17-24	fraction	Daily activity for all nonroadway line sources (see appendix D).
25-32	fraction	Monthly activity for all nonroadway line sources (see appendix D).

NOTE: Fractional input for this hour is complete.

Table 1

LIST OF SOURCE INVENTORY DATA SETS

DATA SET 1	Title Information and Description of Airbase Sources and Locations
DATA SET 2	NAMELIST Data (EGDATA, ACDATA, DSDATA)
DATA SET 3	Meteorological Data
DATA SET 4	Airbase Aircraft and Runway Totals
DATA SET 5	Aircraft Activity
DATA SET 6	Aircraft Parking Areas
DATA SET 7	Aircraft Taxiway Path Segments
DATA SET 8	Aircraft Runways Information
	a. Runway Geometries
	b. Runway Wind Direction Use
	c. Runway Arrivals
	d. Runway Departures
	e. Runway Taxiway Paths
	(1) Inbound Taxiway Usage
	(2) Inbound Taxiway Segments
	(3) Outbound Taxiway Usage
	(4) Outbound Taxiway Segments
DATA SET 9	Aircraft Aerospace Ground Equipment Emissions
DATA SET 10	Aircraft Refueling, Spillage, and Venting Totals
DATA SET 11	Airbase Vehicle Age Distribution
DATA SET 12	Number of Airbase Point Sources
DATA SET 13	Training Fire Point Sources
DATA SET 14	Test Cell Point Sources
DATA SET 15	Run-Up Stand Point Sources
DATA SET 16	Power Plant Point Sources
DATA SET 17	Incinerator Point Sources

Table 1 (cont'd)

DATA SET 18	Petroleum Storage Tank Point Sources
DATA SET 19	Other Airbase Point Sources
DATA SET 20	Airbase Area Source Geometries
DATA SET 21	Airbase Area Sources with Hydrocarbon Filling, Working Loss, and Spillage
DATA SET 22	Hydrocarbon Breathing Loss Sites (from petroleum storage tanks)
DATA SET 23	Hydrocarbon Breathing Losses (petroleum tank truck parking areas)
DATA SET 24	Hydrocarbon Breathing Losses (from military and civilian parking areas)
DATA SET 25	Other Evaporative Hydrocarbon Area Sources
DATA SET 26	Space Heating Area Sources
DATA SET 27	Off-Road Vehicle Area Sources
DATA SET 28	Military Motor Vehicle Area Sources
DATA SET 29	Civilian Motor Vehicle Area Sources
DATA SET 30	Airbase Line Source Geometries
DATA SET 31	Military Motor Vehicle Line Sources
DATA SET 32	Civilian Motor Vehicle Line Sources
DATA SET 33	Other Nonaircraft Line Sources
DATA SET 34	Environ Point Sources
DATA SET 35	Environ Area Sources
DATA SET 36	Environ Roadway Line Sources
DATA SET 37	Environ Nonroadway Line Sources

Table 2

DEFINITION OF NAMELIST VARIABLES

Variable	First dimension	Second dimension	Third dimension	Type	Units	Definition
			Definition of variables contained in NAMELIST - group name EGDATA			
ACNAME	Acft ID	-	-	Hollerith	-	Aircraft name (see table 3)
EGNAME	Eng ID	-	-	Hollerith	-	Engine name (see table 3)
EGEMFC	Pollut ID	Eng mode ID	Eng ID	Real	lbs/1000 lbs fuel	Pollutant emission factor per engine type
EGFF	Eng mode ID	Eng ID	-	Real	1000 lb/hr	Engine fuel flow rates
IACABF	Acft ID	-	-	Integer	-	Aircraft afterburner use indicator[1]
IDACEG	Acft ID	-	-	Integer	-	Identifier of the engine type used by aircraft (see table 3)
IEGABF	Eng ID	-	-	Integer	-	Engine afterburner use indicator[2]
IDRR	Acft ID	-	-	Integer	-	Identifier of the runway roll equation used by aircraft (see table 22)
			Definition of variables contained in NAMELIST - group name ACDATA			
APPHT	-	-	-	Real	km	Aircraft altitude at start of approach
CLMBHT	-	-	-	Real	km	Aircraft altitude at end of climbout
ENGNO	Acft ID	Flag[3]	-	Integer	-	Number of engines[3]
DSCNT1	Acft ID	-	-	Real	deg	Aircraft angle for first phase of approach
DSCNT2	Acft ID	-	-	Real	deg	Aircraft angle for final phase of approach
APSPD1	Acft ID	-	-	Real	km/hr	Aircraft speed at first phase of approach
APSPD2	Acft ID	-	-	Real	km/hr	Aircraft speed at final phase of approach
APPHT2	Acft ID	-	-	Real	km	Aircraft altitude at final phase of approach
ASCNT1	Acft ID	-	-	Real	deb	Aircraft angle at the beginning of first phase of takeoff
ASCNT2	Acft ID	-	-	Real	deg	Aircraft angle at the beginning of the second phase of takeoff[4]
COSPD1	Acft ID	-	-	Real	km/hr	Aircraft speed at the end of the first phase of climbout

Table 2 (cont'd)

Variable	First dimension	Second dimension	Third dimension	Type	Units	Definition
COSPD2	Acft ID	-	-	Real	km/hr	Aircraft speed at the end of the second phase of climbout
COHT1	Acft ID	-	-	Real	km	Aircraft altitude at the beginning of the second phase of climbout
TXISPD	Acft ID	-	-	Real	km/hr	Aircraft taxi speed
LNDSPD	Acft ID	-	-	Real	km/hr	Aircraft speed at point of touchdown
TOSPD	Acft ID	-	-	Real	km/hr	Aircraft speed at point of liftoff
SRTUPT	Acft ID	-	-	Real	min/eng	Time aircraft idles before takeoff
EGCHKT	Acft ID	-	-	Real	min/eng	Time aircraft requires to check engines before takeoff
SHTDNT	Acft ID	-	-	Real	min/eng	Time aircraft idles before shutdown
TOWT	Acft ID	-	-	Real	100 lbs	Weight of aircraft at takeoff
		Definition of variables contained in NAMELIST - group name DSDATA				
ACMO	Month index	Acft ID	-	Real	fraction	Monthly distribution of aircraft activity
ACDY	Weekday/ weekend indicator	Acft ID	-	Real	fraction	Weekday or weekend distribution of aircraft activity[5]
ACHR	Hour index	Acft ID	-	Real	fraction	Hourly distribution of aircraft activity
VHMLMO	Month index	-	-	Real	fraction	Monthly distribution of airbase military vehicle activity
VHMLDY	Weekday/ weekend indicator	-	-	Real	fraction	Weekday or weekend distribution of airbase military vehicle activity[5]
VHMLHR	Hour index	-	-	Real	fraction	Hourly distribution of airbase military vehicle activity
CVABMO	Month index	-	-	Real	fraction	Monthly distribution of airbase civilian vehicle activity
CVABDY	Weekday/ weekend indicator	-	-	Real	fraction	Weekday or weekend distribution of airbase civilian vehicle activity[5]
CVABHR	Hour index	-	-	Real	fraction	Hourly distribution of air base civilian vehicle activity
CVENMO	Month index	-	-	Real	fraction	Monthly distribution of environ vehicle activity

Table 2 (cont'd)

Variable	First dimension	Second dimension	Third dimension	Type	Units	Definition
CVENDY	Weekday/ weekend indicator	-	-	Real	fraction	Weekday or weekend distribution of environ vehicle activity[5]
CVENHR	Hour index	-	-	Real	fraction	Hourly distribution of environ vehicle activity
FLMO	Month index	Fuel ID (table 9)	-	Real	fraction	Monthly distribution of airbase fuel processing activity
FLDY	Weekday/ weekend indicator	Fuel ID (table 9)	-	Real	fraction	Weekday or weekend distribution of fuel processing activity[5]
FLHR	Hour index	Fuel ID (table 9)	-	Real	fraction	Hourly distribution of airbase fuel processing activity

[1]This indicator is either 1 or 0; 1 indicates that the aircraft being defined uses afterburner on takeoff; 0 indicates it does not.

[2]This indicator is either 1 or 0; 1 indicates that the engine being defined has an afterburner; 0 indicates it does not.

[3]If, for a particular aircraft, the number of engines is to be redefined, ENGNO must be defined twice. The first reassignment is used to define the total number of engines used by this aircraft. In this first definition ENGNO contains the aircraft ID as the first dimension and a 1 as the second dimension. The second reassignment is used to define the total number of engines divided by two and rounded to an integer. The second definition contains the aircraft ID as the first dimension and a 2 as the second dimension.

[4]The beginning of the second phase of takeoff is generally defined as the time when afterburner is shut off.

[5]The weekday/weekend indicator is either 1 or 2; 1 indicates that the aircraft activity for the period Monday through Friday is to be defined; 2 indicates that the aircraft activity for the period Saturday through Sunday is to be defined. The hour IDs are listed in table 16, the month IDs in table 15; the fuel IDs are listed in table 9, the aircraft and engine IDs in table 3, and the engine mode IDs in table 3. The variable types are defined in appendix B, and an example of NAMELIST input is described in appendix A.

Table 3

AIRCRAFT, AIRCRAFT ENGINE, AND ENGINE MODE IDENTIFIERS

Aircraft name	Identification No.
B-1	1
B-52	2
B-52H	3
B-57A-3C	4
B-57E-G	5
F-100	6
F-101	7
F-102	8
F-104A	9
F-105	10
F-106	11
F-4	12
F-5	13
F-111A	14
F-15	15
A-7	16
A10	17
A-37	18
C-5	19
C-9	20
C-130	21
KC-135B	22
C-135B	23
C-141	24
C-7	25

Table 3 (cont'd)

Aircraft name	Identification No.
C-47	26
C-97	27
C-119	28
T-29	29
T-33	30
T-37	31
T-38	32
T-39	33
T-41	34
O-1	35
O-2	36
OV-10	37
B-52G	38
F-104C	39
F-4E	40
F-111D	41
F-111F	42
C-5LS	43
C-130H	44
HDM (Hound Dog Missile)	45
Not assigned	46
Not assigned	47
Not assigned	48
Not assigned	49
Transient	50

Table 3 (cont'd)

Engine name	Identification No.
J79-G15	1
J57-P19	2
J52	3
TF33-P3	4
TF30-P7	5
J85	6
J75	7
TF39	8
T56-A7	9
T76	10
0470	11
0360	12
J57-P43	13
J69	14
J79-G17	15
TF30-P9	16
TF34	17
TF41	18
F100	19
F101	20
T56-A15	21
TF39LS	22
J60	23
Not assigned	24
JT-8D	25

Table 3 (cont'd)

Engine mode	Identification No.
Idle	1
Normal	2
Military	3
Afterburner	4

Table 4

VEHICLE CLASSES

Class	Definition
1	Cars of all sizes.
2	Gasoline-burning trucks with a gross vehicle weight less than 6000 lb.
3	Gasoline-burning trucks with a gross vehicle weight greater than 6000 lb and less than 16,000 lb.
4	Gasoline-burning trucks with a gross vehicle weight greater than 16,000 lb and less than 33,000 lb.
5	Gasoline-burning trucks with a gross vehicle weight greater than 33,000 lb.
6	Diesel-burning trucks and buses of all sizes.

Table 5

PLUME RISE FORMULA IDENTIFIERS

Formula Identification	Definition
0	No plume rise
1	Holland plume rise formula
2	Carson-Moses plume rise formula
3	Carson-Moses plume rise formula for training fires

Table 6

POWER PLANT EMISSION FACTOR IDENTIFICATION NUMBER*

Fuel burned	Furnace size (head input) and/or type	ID No.	Input units
Bituminous coal	Greater than 100 million BTU, large industrial or utility	1	metric tons
Bituminous coal	Ten to 100 million BTU, large commercial or general industrial	2	metric tons
Bituminous coal	Less than 10 million BTU, general commercial and domestic (spreader stoker)	3	metric tons
Bituminous coal	Less than 10 million BTU, general commercial and domestic (hand-fired type)	4	metric tons
Anthracite coal	Pulverized (dry bottom), no fly-ash reinjection	5	metric tons
Anthracite coal	Greater than 10 million BTU, overfeed stokers, no fly-ash reinjection	6	metric tons
Anthracite coal	Less than 10 million BTU, overfeed stokers, no fly-ash reinjection	7	metric tons
Anthracite coal	Hand-fired type	8	metric tons
Fuel oil	Greater than 100 million BTU, Utility	9	cubic meters
Fuel oil	Ten to 100 million BTU, industrial and commercial (residual type horizontally and tangentially fired)	10	cubic meters
Fuel oil	Ten to 100 million BTU, industrial and commercial (distillate horizontally and tangentially fired)	11	cubic meters
Fuel oil	Less than 10 million BTU, domestic	12	cubic meters
Natural gas	Greater than 100 million BTU, utility	13	million cubic meters
Natural gas	Industrial	14	million cubic meters

Table 6 (cont'd)

Fuel burned	Furnace size (head input) and/or type	ID No.	Input units
Natural gas	Commercial	15	million cubic meters
Natural gas	Domestic	16	million cubic meters
Liquified petroleum gas	Industrial (Butane)	17	cubic meters (liquid)
Liquified petroleum gas	Industrial (Propane)	18	cubic meters (liquid)
Liquified petroleum gas	Commercial boilers (Butane)	19	cubic meters (liquid)
Liquified petroleum gas	Domestic boilers (Butane)	20	cubic meters (liquid)
Liquified petroleum gas	Commercial boilers (Propane)	21	cubic meters (liquid)

*The type of furnace to be defined is identified according to its size, description, and fuel burned. After this determination is made, the total amount of fuel used at this plant is defined in the appropriate data set in the units corresponding to this furnace type.

Table 7

POLLUTANT TYPE IDENTIFICATION

Pollutant name	Coded name	ID No.
Carbon monoxide	CO	1
Total hydrocarbons	HC	2
Oxides of nitrogen	NOX	3
Particulate matter	PT	4
Oxides of sulfur	SOX	5

Table 8

INCINERATOR EMISSION FACTOR IDENTIFICATION NUMBERS

Type of trash burned	ID No.
Pathological	1
Paper (single chamber)	2
Paper (multiple chamber)	3
Film (single chamber)	4
Film (multiple chamber)	5

Table 9

FUEL TYPE IDENTIFICATION

Fuel name	Coded name	ID No.
Automotive gasoline (MO gas)	AMG	1
Jet fuel (JP-4)	JP4	2
Aviation gasoline (AV gas)	AVG	3
Diesel fuel	DESL	4
Jet fuel - Navy (JP-5)	JP5	5
Experimental fuel (JP-8)	JP8	6
Civil fuel (JETA)	JETA	7

Table 10

ALTITUDE DEPENDENT MOTOR VEHICLE EMISSION FACTOR IDENTIFIERS

ID No.	Definition
1	Low altitude emission factors. These factors are used for areas outside California* which are below 3500 feet above sea level.
2	High altitude emission factors. These factors are used for areas outside California* which are above 3500 feet above sea level.
3	California emission factors.*

*The State of California has more stringent emission standards than other states. It is, therefore, necessary to specify that a facility is in California so that appropriate factors can be used in calculating the emissions.

Table 11

HOT/COLD RUNNING MOTOR VEHICLE EMISSION FACTOR IDENTIFIERS

ID No.	Definition
1	Hot running emission factors used for all vehicles.
2	Cold running emission factors used for all vehicles.
3	Combine hot running emission factors with cold start emissions for all vehicles.

Table 12

ENVIRON AREA SOURCE OPTION SELECTION IDENTIFIERS

ID No.	Description
0	No environ areas to be defined.
1	Environ areas will be defined as either stationary or mobile sources and defined separately.
2	Environ areas will be defined according to EPA land use categories (see table 13).
3	Environ stationary and mobile area sources will be combined in a group. No distinction will be made between mobile and stationary source types. Emissions in each environ area will be hand calculated and total emission input.

Table 13

ENVIRON LAND USE CATEGORY IDENTIFIERS

(Based on Northern Research Classification Scheme)

Land use category	ID No.
City center	1
Urban area	2
Suburban area	3
Semirural area	4
Rural area	5
Cemetery	6
Park	7
Airport	8

Table 14

LIST OF SHORT-TERM DATA SETS

DATA SET 1	Title Information
DATA SET 2	General Problem Description
DATA SET 3	Period Definition
DATA SET 4	Meteorological Information
DATA SET 5	Temporal Distribution Indicator
DATA SET 6	Temporal Distribution of Airbase Point Sources
DATA SET 7	Temporal Distribution of Airbase Area Sources
DATA SET 8	Temporal Distribution of Airbase Line Sources
DATA SET 9	Temporal Distribution of Environ Point Sources
DATA SET 10	Temporal Distribution of Environ Area Sources
DATA SET 11	Temporal Distribution of Environ Nonroadway Line Sources

Table 15

SHORT-TERM MONTH IDENTIFIER

Month	ID No.
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Table 16

SHORT-TERM HOUR IDENTIFIER

Hour	ID No.
0000-0100	1
0100-0200	2
0200-0300	3
0300-0400	4
0400-0500	5
0500-0600	6
0600-0700	7
0700-0800	8
0800-0900	9
0900-1000	10
1000-1100	11
1100-1200	12
1200-1300	13
1300-1400	14
1400-1500	15
1500-1600	16
1600-1700	17
1700-1800	18
1800-1900	19
1900-2000	20
2000-2100	21
2100-2200	22
2200-2300	23
2300-2400	24

Table 17

STABILITY CATEGORY IDENTIFIERS

Stability description	PASQUILL stability class	ID No.
Extremely unstable	A	1
Moderately unstable	B	2
Slightly unstable	C	3
Neutral	D	4
Slightly stable	E	5
Stable	F,G	6

Table 18

TEMPORAL DISTRIBUTION INPUT INDICATOR

Temporal distribution identifier	Description	User response
-1	Activity of all sources is assumed uniform.	Cards defining the temporal distribution for individual sources are not input.
0	Activity is defined for individual sources.	Card defining the temporal distribution for individual sources are input.
1	Activity defined in the previous period is used.	Cards defining the temporal distribution for individual sources are not input.

Table 19

LIST OF LONG-TERM DATA SETS

DATA SET 1	Title Information
DATA SET 2	General Problem Description
DATA SET 3	Period Definition
DATA SET 4	Temporal Distribution Indicator
DATA SET 5	Temporal Distribution of Airbase Point Sources
DATA SET 6	Temporal Distribution of Airbase Area Sources
DATA SET 7	Temporal Distribution of Airbase Line Sources
DATA SET 8	Temporal Distribution of Environ Point Sources
DATA SET 9	Temporal Distribution of Environ Area Sources
DATA SET 10	Temporal Distribution of Environ Nonroadway Line Sources

Table 20

LONG-TERM PERIOD IDENTIFIERS

Period	ID No.
0000-2400	1
0600-1800	2
0600-0900	3
0900-1500	4
1500-1800	5
1800-2100	6
2100-0600	7

Table 21

LONG-TERM MONTH IDENTIFIER

Month	ID No.
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Table 22

AIRCRAFT RUNWAY ROLL EQUATION IDENTIFIER

Equations have been developed to describe the distance required by an aircraft to lift off. The distance is determined as a function of aircraft weight, temperature, pressure altitude, and wind component. These equations are specific for 26 different aircraft types and are programmed into the AQAM. Each aircraft in the AQAM inventory is assigned a programmed runway roll equation. These assignments are listed below.

Aircraft	Aircraft runway roll equation used by this aircraft	Equation ID No.
B1	F-4	12
B-52	B-52	2
B-52H	B-52	2
B-57A-3C	B-57	4
B-57E-G	B-57	4
F-100	F-100	6
F-101	F-101	7
F-102	F-102	8
F-104	F-104	9
F-105	F-105	10
F-106	F-106	11
F-4	F-4	12
F-5	F-5	13
F-111A	F-111	14
F-15	No equation assigned	-
A-7	A-7	16
A-10	No equation assigned	-
A-37	A-37	18
C-5	C-5	19
C-9	C-9	20

Table 22 (cont'd)

Aircraft	Aircraft runway roll equation used by this aircraft	Equation ID No.
C-130	C-130	21
KC-135	C-135	22
C-135B	C-135	22
C-141	C-141	24
C-7	C-7	25
C-47	T-29	26
C-97	T-29	26
C-119	T-29	26
T-29	T-29	26
T-33	T-33	30
T-37	T-37	31
T-38	T-38	32
T-39	T-39	33
T-41	O-2	34
O-1	O-2	34
O-2	O-2	34
OV-10	OV-10	37
B-52G	B-52	2
F-104C	F-104	9
F-4E	F-4	12
F-11D	F-111	14
F-111F	F-111	14
C-5LS	C-5	19
C-130H	C-130	21
Hound Dog Missile	No equation assigned	-

Table 22 (cont'd)

Aircraft	Aircraft runway roll equation used by this aircraft	Equation ID No.
Not assigned	No equation assigned	-
Not assigned	No equation assigned	-
Not assigned	No equation assigned	-
Not assigned	No equation assigned	-
Transient	F-4	-

Table 23

SUGGESTED SOURCE IDENTIFICATION SYSTEM FOR SOURCE INVENTORY INPUT

Data sets	Suggested source ID Nos.
1	Not applicable
2	Not applicable
3	Not applicable
4	Not applicable
5	Not applicable
6	01-06
7	Not applicable
8	Not applicable
9	Not applicable
10	Not applicable
11	Not applicable
12	Not applicable
13	2000-2099
14	2100-2199
15	2200-2299
16	2300-2399
17	2400-2499
18	2500-2599
19	2600-2699
20	3000-3899
21	3000-3099
22	3100-3199
23	3200-3299
24	3300-3399
25	3400-3499
26	3500-3599
27	3600-3699
28	3700-3799
29	3800-3899
30	4000-4299
31	4000-4099
32	4100-4199
33	4200-4299
34	5000-5999
35	6000-6999
36	7000-7999
37	8000-8999

APPENDIX A

DEFINITION OF NAMELIST INPUT

Aircraft and temporal distribution data have been programmed as part of a data base in the AQAM source inventory computer code. These data include aircraft engine emission factors, aircraft landing and takeoff parameters and values for the temporal distribution of aircraft and airbase activity. A list of all programmed data is listed at the end of this appendix. These programmed data are considered to be good overall averages and are automatically used by the program when the user has not input other data. If, however, the user has data which, for certain parameters, he feels is more accurate than those programmed, he can, through the use of the namelist input, redefine these parameters in the code. Only the variables specifically stated in the namelist input will be altered and these alterations will not be permanently implemented in the code. Therefore, if these alterations are needed in subsequent runs, the namelist input cards containing these changes must be included in the source inventory input data deck.

All namelist variables and their defined meanings are listed in table 2. The type of variable, along with the number and meaning of each dimension, is also included. Each variable must be assigned constants in the "type" of the variable only. For example, if a namelist variable is defined as integer, only integer constants can be assigned to it. Variable types are explained in appendix B. Many of the variables in the namelist are dimensioned variables, thus they contain subscripts. A dimensioned variable allows many quantities to be represented with one variable name. A particular quantity is indicated by writing a subscript (or subscripts) in parentheses after the variable name. The individual quantities are called elements. A variable of one dimension contains a string of associated elements. The subscript indicates which element is to be considered. For example, TXISPD(3) = 15.4 indicates that the taxi speed of the B-57H aircraft is to be reassigned to 15.4. A two-dimensional variable can be envisioned as being composed of horizontal rows and vertical columns. The first subscript refers to the column number. The total number of elements in the array equal the number of rows multiplied by the number of

columns and again each element is indicated by a certain set of subscripts. For example, ACMO(2,3) = .4 indicates that the activity fraction for the B-57 aircraft in the month of February is to be reassigned 0.4. A three-dimensional variable can be thought as being composed of three planes, each of which contain rows and columns intersecting each other at right angles. Once again, a particular element is indicated by the subscripts. For example, EGEMFC(1,2,4) = 23.4 indicates that the pollutant emission factor for carbon monoxide for the NORMAL mode of the TF33-P3 engine is to be reassigned to 23.4.

There is no outward display by the AQAM Source Inventory Code to indicate that namelist reassignments have been made. These changes are done internally by the code, but the user can verify that the proper elements have been reassigned by observing the programmed (default) data which are printed throughout the source inventory output. If namelist reassignments have been made, the replacement values will appear in the appropriate area of this printed default data.

Namelist reassignments are input in a free format. That is, the variable names and numbers are not punched in certain prescribed card columns; rather they are listed in a free form across the card with each variable and its assignment delimited by commas. Although the format is free, the rules for input of namelist information are explicit. These rules do vary from one machine to another, and the user is advised to seek the advice of competent computer personnel concerning these rules if he is not sure of the form of namelist input for the computer he will use. The rules set forth and the examples given in this manual are valid only for CDC 6000 or 7000 series computers.

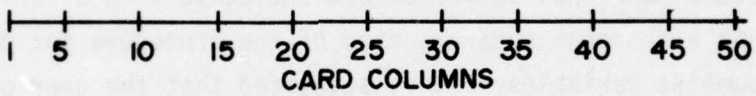
The namelist input in the source inventory consists of three namelist group names:

1. EGDATA
2. ACDATA
3. DSDATA

To reassign the variables associated with a group name, a $ (dollar sign) is punched in Column 2, followed immediately by the group name and a blank. Variables are then input and when all necessary reassignments for this group have been made, another $ (dollar sign) must be punched to terminate the

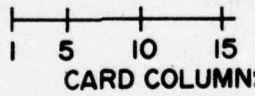
reassignments. This terminator must follow the last assignment value. Card Columns 2 through 80 can be punched for namelist input. Card Column 1 is NEVER punched. Only variables associated with the group name can be defined and each variable name and its assigned value (including the last) is delimited by a comma. For example, if variables in namelist group name EGDATA were being defined, it is illegal to attempt to define TOWT within this group since it is associated with namelist group name ACDATA. Additionally, within a given group name, only those variables to receive a new value are punched. For example, consider that group name EGDATA is being defined and the only reassignment involves changing the aircraft afterburner indicator for the F-100 aircraft from "on" to "off" and to reassign the identifier for the runway roll equation for the B-1 aircraft from 12 to 14. These changes would be implimented as follows:

```
$EGDATA    IACABF(6)  =  0, IDRR(1)  =  14,$
```



If no changes are to occur, the card would be punched as follows:

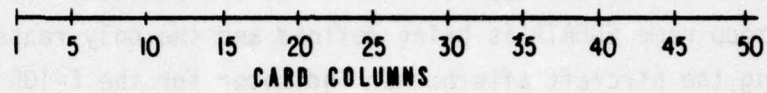
```
$EGDATA    $
```



If a sufficient number of changes occur, the assignments can be continued on several cards. However, a variable name with its assigned value and delimiting comma may not span from one card to another. If the user sees that a variable assignment will not fit between the last column punched and Column 80 of a card, these remaining columns may be left blank and variable assignments continued on another card starting in Column 2. Continuation cards do not contain the namelist group name and act merely as an extension of the first card. Consecutive cards can be added as necessary to complete assignments within a group. A $ (dollar sign) indicating group name termination follows the last assignment on the last continuation card.

It is possible to make consecutive assignments to a dimensioned variable without specifically mentioning each element. For example, if the taxi speed for aircraft 3 through 5 is to be redefined to 12.3, any one of the following forms is legal:

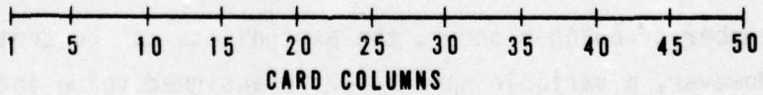
```
1.  $ACDATA   TXISPD(3) = 12.3, TXISPD(4) = 12.3,
    TXISPD(5) = 12.3,$
2.  $ACDATA   TXISPD(3) = 12.3, 12.3, 12.3,$
3.  $ACDATA   TXISPD(3) = 3*(12.3),$
```



It is obvious that if each aircraft were to be assigned a different value, only the first two forms would be valid. It is not advisable to use forms 2 or 3 for two or three-dimensional variables without consulting a FORTRAN user's manual to obtain a thorough understanding of the procedure for defining multi-dimensional namelist variables. It is suggested that the user utilize form 1 unless he has a good understanding of the FORTRAN computer language.

All namelist group names must be input for each source inventory run regardless of whether there are or are not reassignments. In addition, these groups must be input in the order listed in table 2. A typical namelist data set structure may appear as follows:

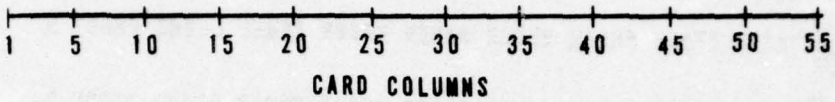
```
$EGDATA   $
$ACDATA   LNDSPD(19) = 396.,$
$DSDATA   ACMO(1,19) = .6, ACMO(2,19) = .6,$
```



Certain namelist variables deserve special attention. They are ACNAME and EGNAME in group EGDATA and APPHT and CLMBHT in ACDATA. Because of their hollerith type, ACNAME and EGNAME are unique among all other variables. These variables, when utilized, are assigned a string of alphanumeric characters to describe the aircraft and engine name. This string of variables must be defined in a hollerith field. The hollerith field consists of a number and an H,

followed by the character string. The number defines the number of characters used to describe the aircraft or engine name (see appendix B). A maximum of eight characters is allowed per string. For example, to reassign the name of aircraft 5 from B-57E-G to B-57 and to reassign the name of engine 1 from J79-G1 to J-79H, the following card would be punched:

```
$EGDATA    ACNAME(5)  =  4HB-57, EGNAME(1)  =  5HJ-79H,$
```



Variables APPHT and CLMBHT are not dimensioned. They are assigned a value without subscripts.

Although it is not essential, it is beneficial if the user has a fundamental knowledge of FORTRAN and the AQAM code. If this is not possible, it is suggested that competent computer personnel be made available for consultation concerning the rules for creating a properly coded namelist data set.

The programmed values for every variable in each namelist group are listed in the following tables.

DEFAULT LTO CYCLE DATA

	Aircraft*	ID of assigned engine (IDACEF)	After-burner use (IACABF)	Runway roll equa-tion** (IDRR)	Gross weight (1000 lbs) (TOWT)	No. of engines (ENGNO)	Angle for phase 1 of approach (DSCNT1)	Angle for final phase of approach (DSCNT2)	Speed at phase 1 of approach (APSPD1)	Speed at final phase of approach (APSPD2)	Altitude at final phase of approach (APPHT2)	Angle at phase 1 of takeoff (ASCNT1)	Angle at final phase of takeoff (ASCNT2)	Speed at phase 1 of climbout (COSPD1)	Speed at final phase of climbout (COSPD2)	Altitude at initial phase of climbout (COHT1)	Taxi speed (TXISPD)	Touch-down speed (LNDSPD)	Take-off speed (TOSPD)	Idle time before takeoff (SRTUPT)	Engine check time before takeoff (EGCHKT)	Idle time before shutdown (SHTDNT)
1	B1	20	1	12	0.0	4	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0	0	0.00	0.0	0	0	0.0	0.00	0.00
2	B52	2	1	2	340.0	8	2.5	2.5	329.2	310.9	0.22	5.0	5.5	369	558	0.33	12.0	296	267	20.0	4.50	4.80
3	B52-H	4	0	3	340.0	8	2.5	2.5	329.2	310.9	0.22	5.0	5.5	369	558	0.33	12.0	296	267	20.0	4.50	4.80
4	B57A-3C	6	1	4	45.0	2	8.8	2.5	463.0	333.0	0.16	4.0	8.0	582	582	0.60	27.0	203	212	10.0	0.10	0.50
5	B57E-6	4	0	5	45.0	2	8.8	2.5	463.0	333.0	0.16	4.0	8.0	582	582	0.60	27.0	203	212	10.0	0.10	0.50
6	F100	2	1	6	36.0	1	3.5	3.0	420.6	329.0	0.18	5.0	7.8	450	499	0.32	9.9	278	296	6.1	0.60	1.00
7	F101	2	1	7	45.0	2	4.0	3.5	438.9	310.9	0.21	6.0	8.2	585	658	0.47	34.0	278	314	6.1	2.00	2.00
8	F102	2	1	8	30.0	1	3.5	3.5	402.3	329.2	0.22	6.0	12.0	549	549	0.30	34.0	296	314	8.0	2.00	2.00
9	F104A	15	1	9	20.0	1	4.0	3.5	471.8	329.2	0.13	6.5	9.9	592	658	0.36	9.2	314	365	5.0	0.80	0.50
10	F105	7	1	10	45.0	1	4.0	2.5	462.7	332.8	0.12	8.0	8.2	554	554	0.52	12.0	332	342	6.1	0.80	0.80
11	F106	7	1	11	35.0	1	3.5	3.5	402.3	329.2	0.22	6.0	12.9	554	554	0.30	34.0	296	296	8.0	2.00	2.00
12	F4	15	1	12	50.0	2	3.5	3.4	438.9	310.9	0.20	6.0	12.7	554	554	0.30	37.0	287	314	6.4	0.80	0.40
13	F5	6	1	13	18.0	2	3.0	2.5	548.7	365.8	0.07	5.0	9.1	556	556	0.18	25.0	239	287	5.0	0.75	0.66
14	F111A	5	1	14	75.0	2	3.5	2.5	457.2	329.2	0.15	7.0	12.0	554	554	0.34	12.9	258	283	6.2	1.40	1.30
15	F15	19	1	15	0.0	2	3.5	3.4	438.9	310.9	0.20	6.0	9.3	549	640	0.30	0.0	287	314	0.0	0.00	0.00
16	A7	18	0	16	30.0	1	3.5	3.0	457.2	310.9	0.17	10.0	10.0	463	463	0.90	37.0	241	263	15.0	2.00	3.00
17	A10	17	0	17	0.0	2	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0	0	0.00	0.0	167	0	0.0	0.00	0.00
18	A37	14	0	18	11.0	2	5.5	2.5	256.0	219.4	0.08	5.0	6.1	366	439	0.20	22.0	166	185	8.0	2.00	2.00
19	C5	8	0	19	520.0	4	3.0	2.5	329.2	259.7	0.27	4.0	11.2	399	499	0.18	15.9	227	234	3.0	0.10	2.00
20	C9	25	0	20	84.0	2	3.0	2.5	310.9	274.3	0.26	5.0	11.4	349	450	0.27	32.5	212	260	3.2	0.10	0.30
21	C130	9	0	21	100.0	4	3.5	2.5	292.6	237.7	0.23	4.0	10.0	300	400	0.20	42.0	185	194	2.8	0.10	0.70
22	KC135A	13	0	22	220.0	4	2.5	2.5	329.2	310.9	0.18	4.6	5.2	331	481	0.30	13.3	296	305	20.0	2.50	4.50
23	C135B	4	0	23	220.0	4	2.5	2.5	329.2	310.9	0.18	4.6	5.2	331	481	0.30	13.3	296	305	20.0	2.50	4.50
24	C141	4	0	24	220.0	4	3.5	2.5	349.3	299.9	0.29	6.0	11.3	463	554	0.25	24.8	240	250	2.0	0.10	7.30
25	C7	9	0	25	24.0	2	4.0	2.5	219.4	201.1	0.18	6.0	6.0	210	219	0.10	35.0	128	128	7.0	3.00	7.00
26	C47	11	0	26	50.0	2	3.5	2.5	274.3	219.4	0.21	5.0	8.6	256	402	0.25	27.0	166	183	15.0	3.00	2.00
27	C97	11	0	27	50.0	4	3.5	2.5	274.3	219.4	0.21	5.0	10.3	256	402	0.22	27.0	166	183	15.0	3.00	2.00
28	C119	11	0	28	50.0	2	3.5	2.5	276.1	219.4	0.21	5.0	7.0	250	377	0.21	23.6	166	170	3.2	0.10	0.30
29	T29	11	0	29	50.0	2	3.5	2.5	276.1	219.4	0.21	5.0	7.0	250	342	0.25	17.1	166	185	2.5	0.10	0.50
30	T33	6	1	30	14.0	1	4.0	2.5	329.2	237.7	0.29	6.0	6.3	300	450	0.23	34.2	185	223	2.5	0.30	0.40
31	T37	14	0	31	6.0	2	5.6	2.5	256.0	219.4	0.06	5.0	6.0	366	457	0.20	22.3	148	168	3.8	0.50	0.60
32	T38	6	1	32	12.0	2	3.0	2.5	548.7	365.8	0.06	5.0	9.1	556	556	0.18	21.8	240	187	5.2	0.30	0.70
33	T39	6	1	33	14.0	2	4.3	3.0	420.6	310.9	0.13	6.0	7.5	349	450	0.30	37.5	203	223	2.3	0.10	0.30
34	T41	12	0	34	4.5	1	10.0	3.0	200.0	150.0	0.40	4.0	6.0	150	200	0.50	27.0	111	129	8.0	2.00	2.00
35	01	11	0	35	4.5	1	4.0	2.5	219.4	201.1	0.17	6.0	6.0	201	219	0.17	27.0	111	129	10.0	2.00	2.00
36	02	12	0	36	4.5	2	4.0	2.5	219.4	201.1	0.17	6.0	6.0	201	219	0.17	27.0	111	129	20.0	2.00	2.00
37	OV10	10	0	37	11.0	2	3.5	2.5	274.3	219.4	0.21	6.0	9.0	329	439	0.27	34.0	111	190	15.0	2.00	2.00
38	B52G	13	0	2	340.0	8	2.5	2.5	329.2	310.9	0.22	5.0	5.5	369	558	0.33	12.0	166	267	20.0	4.50	4.80
39	F104C	15	1	9	20.0	1	4.0	3.5	471.8	329.2	0.13	6.5	9.9	592	658	0.36	9.2	296	366	5.0	0.80	0.50
40	F4E	1	1	12	50.0	2	3.5	3.4	438.9	310.9	0.20	6.0	12.7	554	554	0.30	37.0	314	314	6.5	0.80	0.40
41	F111D	16	1	14	75.0	2	3.5	2.5	457.2	329.2	0.15	7.0	12.0	554	554	0.34	12.9	297	283	6.2	1.40	1.30
42	F111F	16	1	14	75.0	2	3.5	2.5	457.2	329.2	0.15	7.0	12.0	554	554	0.34	12.9	285	283	6.2	1.40	1.30
43	C5LS	22	0	19	520.0	4	3.0	2.5	329.2	259.7	0.27	4.0	11.2	399	499	0.18	15.9	277	234	3.0	0.10	2.00
44	C130H	21	0	21	100.0	4	3.5	2.5	292.6	237.7	0.23	4.0	10.0	300	400	0.20	42.0	185	194	2.8	0.10	0.70
45	HDM	25	0	100	0.0	0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0	0	0.00	0.0	0	0	0.0	0.00	0.00
46	TRANSIENT	1	1	12	50.0	2	3.5	3.4	438.9	310.9	0.20	6.0	12.7	554	554	0.30	37.0	287	314	6.4	0.80	0.40

*See table 22.

**See table 3.

DEFAULT ENGINE DATA

ENGINE	ENGINE MODE*	FUEL RATE (EGFF) 1000 LB/HR	POLLUTANT EMISSION DATA (POUNDS PER 1000 LB OF FUEL) (EGEMFC) CO	HC	NOX	PM	SOX
J79-G15	Idle	1.131E+00	5.67E+01	1.07E+01	2.47E+00	5.00E-01	1.00E+00
	Normal	2.720E+00	1.14E+01	1.33E+00	4.25E+00	2.22E+00	1.00E+00
	Military	8.921E+00	2.28E+00	2.20E-01	8.94E+00	2.36E+00	1.00E+00
	Afterburner	3.224E+01	4.00E+00	1.00E-02	3.11E+00	1.54E-01	1.00E+00
J57-P19	Idle	1.104E+00	5.85E+01	5.34E+01	2.50E+00	3.74E+00	1.00E+00
	Normal	1.709E+00	2.64E+01	1.20E+01	3.60E+00	3.74E+00	1.00E+00
	Military	8.520E+00	2.00E+00	7.00E-01	1.18E+01	3.74E+00	1.00E+00
	Afterburner	3.610E+01	3.17E+01	7.00E-01	4.40E+00	3.47E+00	1.00E+00
J52	Idle	8.300E-01	7.97E+01	2.22E+01	1.80E+00	6.30E-01	1.00E+00
	Normal	4.860E+00	9.50E+00	1.00E+00	7.50E+00	6.30E+01	1.00E+00
	Military	6.490E+00	2.10E+00	4.00E-01	9.50E+00	6.30E-01	1.00E+00
TF33-P3	Idle	8.460E-01	8.34E+01	1.04E+02	2.02E+00	3.80E-01	1.00E+00
	Normal	3.797E+00	8.99E+00	3.79E+00	7.30E+00	3.80E-01	1.00E+00
	Military	9.979E+00	4.10E-01	1.10E-01	1.41E+01	3.80E-01	1.00E+00
TF30-P7	Idle	1.250E+00	6.82E+01	1.94E+01	6.52E+00	2.21E+00	1.00E+00
	Normal	6.650E+00	6.30E+00	2.00E+00	1.20E+01	2.21E+00	1.00E+00
	Military	7.120E+00	3.10E+00	1.65E-01	2.69E+01	2.21E+00	1.00E+00
	Afterburner	3.840E+01	6.39E+00	1.40E-02	9.00E+00	2.21E+00	1.00E+00
J85	Idle	4.530E-01	1.80E+02	2.99E+01	1.26E+00	1.30E-02	1.00E+00
	Normal	1.462E+00	4.33E+01	3.37E+00	2.32E+00	1.70E-02	1.00E+00
	Military	2.630E+00	2.93E+01	8.40E-01	2.68E+00	1.80E-02	1.00E+00
	Afterburner	8.323E+00	2.60E+01	7.00E-02	1.99E+00	8.00E-03	1.00E+00
TF39	Idle	1.134E+00	6.67E+01	2.30E+01	2.95E+00	3.00E-01	1.00E+00
	Normal	1.500E+00	3.85E+01	1.29E+01	3.75E+00	1.40E+00	1.00E+00
	Military	1.191E+01	5.90E-01	1.80E-01	2.85E+01	1.50E+00	1.00E+00
T56-A7	Idle	6.930E-01	1.40E+01	1.04E+01	6.17E+00	6.11E-01	1.00E+00
	Normal	8.270E-01	6.08E+00	4.80E+00	6.46E+00	1.04E+00	1.00E+00
	Military	1.967E+00	2.00E+00	2.25E+00	9.26E+00	5.65E-01	1.00E+00
T76	Idle	1.920E-01	2.38E+01	7.42E+00	7.35E+00	3.80E-01	1.00E+00
	Normal	3.470E-01	5.92E+00	1.10E-01	9.88E+00	6.30E-01	1.00E+00
	Military	3.870E-01	2.28E+00	6.40E-02	1.03E+01	7.10E-01	1.00E+00
0470	Idle	1.512E-02	7.43E+02	1.91E+02	1.02E+00	6.00E+01	6.00E-01
	Normal	8.555E-02	6.92E+02	9.46E+00	9.37E+00	4.00E+01	6.00E-01
	Military	1.313E-01	1.16E+03	2.04E+01	1.11E+00	2.00E+01	6.00E-01
0360	Idle	1.517E-02	8.48E+02	1.45E+02	1.09E+00	6.00E+01	6.00E-01
	Normal	6.788E-02	9.72E+02	1.74E+01	6.60E+00	4.00E+01	6.00E-01
	Military	8.870E-02	1.03E+03	2.25E+01	5.32E+00	2.00E+01	6.00E-01
J57-P43	Idle	1.214E+00	7.53E+01	6.18E+01	1.90E+00	1.18E+00	1.00E+00
	Normal	1.849E+00	4.61E+01	2.23E+01	3.60E+00	1.18E+00	1.00E+00
	Military	1.061E+01	2.30E+00	9.00E-01	1.52E+01	1.18E+00	1.00E+00
J69	Idle	2.310E-01	1.27E+02	1.95E+01	1.53E+00	7.29E-01	1.00E+00
	Normal	6.980E-01	4.91E+01	1.29E+00	2.67E+00	1.70E-02	1.00E+00
	Military	1.095E+00	3.13E+01	5.00E-01	3.60E+00	2.00E-02	1.00E+00
J79-G17	Idle	1.060E+00	4.01E+01	9.00E+00	2.70E+00	2.30E-01	1.00E+00
	Normal	3.340E+00	7.80E+00	1.70E+00	5.80E+00	2.22E+00	1.00E+00
	Military	9.820E+00	1.80E+00	6.00E-02	1.48E+01	2.22E+00	1.00E+00
	Afterburner	3.495E+01	1.35E+01	2.00E-02	5.70E+00	6.70E-01	1.00E+00
TF30-P9	Idle	1.250E+00	4.64E+01	1.26E+01	6.52E+00	2.21E+00	1.00E+00
	Normal	6.650E+00	6.00E+00	2.00E+00	1.20E+01	2.21E+00	1.00E+00
	Military	7.120E+00	3.00E+00	1.20E+00	1.97E+01	2.21E+00	1.00E+00
	Afterburner	4.285E+01	2.48E+01	2.00E+00	4.47E+00	2.21E+00	1.00E+00
T34	Idle	3.730E-01	1.13E+02	1.74E+01	2.50E+00	1.05E-01	1.00E+00
	Normal	1.215E+00	1.10E+01	9.00E-01	6.30E+00	1.05E-01	1.00E+00
	Military	3.275E+00	7.00E-01	2.00E-01	1.18E+01	1.05E-01	1.00E+00
TF41	Idle	1.070E+00	1.07E+02	6.62E+01	1.30E+00	1.05E-01	1.00E+00
	Normal	5.210E+00	5.20E+00	2.40E+00	1.06E+01	1.05E-01	1.00E+00
	Military	9.040E+00	1.60E+00	6.00E-01	2.23E+01	1.05E-01	1.00E+00
F100	Idle	1.060E+00	1.93E+01	2.30E+00	4.00E+00	5.30E-01	1.00E+00
	Normal	3.000E+00	3.00E+00	6.00E-01	1.10E+01	5.30E-01	1.00E+00
	Military	1.004E+01	1.80E+00	5.00E-02	4.40E+01	5.30E-01	1.00E+00
	Afterburner	4.420E+01	5.50E+01	1.00E-01	1.65E+01	5.30E-01	1.00E+00
F101	Idle	0.	1.72E+01	9.00E-01	4.20E+00	2.30E-01	1.00E+00
	Normal	0.	3.20E+00	3.00E-01	3.20E+00	2.30E-01	1.00E+00
	Military	0.	5.00E-01	2.00E-01	2.39E+01	2.30E-01	1.00E+00
	Afterburner	0.	6.50E+01	1.00E+00	8.00E+00	2.30E-01	1.00E+00
T56-A15	Idle	4.930E-01	1.81E+01	1.51E+01	2.45E+00	3.80E-01	1.00E+00
	Normal	1.145E+00	3.04E+00	2.90E-01	6.39E+00	6.30E-01	1.00E+00
	Military	2.392E+00	1.56E+00	1.80E-01	1.17E+01	7.10E-01	1.00E+00
TF39LS	Idle	1.134E+00	6.67E+01	2.30E+01	2.95E+00	2.10E-02	1.00E+00
	Normal	1.500E+00	3.85E+01	1.29E+01	3.75E+00	1.60E-02	1.00E+00
	Military	1.191E+01	5.90E-01	1.80E-01	2.85E+01	9.00E-03	1.00E+00
J60	Idle	4.590E-01	7.09E+01	9.85E+01	1.49E+00	2.60E-02	1.00E+00
	Normal	1.423E+00	1.48E+01	3.20E-01	3.09E+00	1.58E-01	1.00E+00
	Military	2.456E+00	3.88E+00	9.00E-02	4.71E+00	1.67E-01	1.00E+00
Unassigned	Idle	0.	0.	0.	0.	0.	0.
JT-8D	Idle	9.590E-01	5.00E+01	9.60E+00	2.00E+00	6.00E-01	1.00E+00
	Normal	7.370E+00	6.60E+00	1.40E+00	2.70E+00	2.70E+00	1.00E+00
	Military	8.755E+00	1.20E+00	6.00E-01	4.30E+00	2.50E+00	1.00E+00

DEFAULT TEMPORAL DISTRIBUTION DATA

Description	Namelist variables	Default value
Monthly aircraft activity	ACMO	1/12 (month 1-12), (1. for month 13)*
Daily aircraft activity	ACDY	1/7
Hourly aircraft activity	ACHR	1/12 (0600-1800), (0 all other times)
Monthly military vehicle activity	VHMLMO	1/12 (month 1-12), (1. for month 13)*
Daily military vehicle activity	VHMLDY	1/7
Hourly military vehicle activity	VHMLHR	1/12 (0600-1800), (0 all other times)
Monthly civilian vehicle activity	CVABMO	1/2 (month 1-12), (0 all other times)
Daily civilian vehicle activity	CVABDY	1/7
Hourly civilian vehicle activity	CVABHR	1/2 (0600-1800), (0 all other times)
Monthly environ vehicle activity	CVENMO	1/12 (month 1-12), (1. for month 13)*
Daily environ vehicle activity	CVENDY	1/7
Hourly environ vehicle activity	CVENHR	1/12 (0600-1800), (0 all other times
Monthly fuel processing activity for all fuels	FLMO	1/12 (month 1-12), (1. for month 13)*
Daily fuel processing activity for all fuels	FLDY	1/7
Hourly fuel processing activity for all fuels	FLHR	1/12 (0600-1800), (0 all other times)

*Month 13, utilized by long-term model only; see table 21.

APPENDIX B

CARD INPUT FORMATS

The FORMAT specification is used to describe to the computer how the information input by the user is to be arranged on the card and what type of information it is. To each value punched there must be a corresponding format in the computer code which specifies the type of information to be read and the total number of card columns used to hold this information. This total number of card columns is defined as the field length.

The input FORMATs specified throughout this manual are identical to the ones programmed in the AQAM computer code. The user will, therefore, be aware of the exact structure of the data to be input.

The AQAM input formats are comprised of five types of field specifications. Each complete field specification consists of the following:

1. A letter (I, F, A, H, or X) indicating the type of data.

2. A number designating how many card columns are used for this data.

In I, F, and H fields it is permissible to specify that the same field specification number applies to a repeated number of successive fields. This is done by replacing a number defining the number of repetitions in front of the field to be repeated.

A slash (/) in any format specification indicates that the remainder of the format specification is used to describe the input for the next card.

Specific rules for using each of the format types are described below.

1. FIELD SPECIFICATION I (INTEGER FIELD)

The form used for this is In, where n describes the total number of card columns containing this number (including the sign of the number and any blanks). If no sign is found, it is assumed positive. Decimal points are not permitted and if the number does not occupy the entire field, it must be punched in the right-most position of the field. Blanks in the field are interpreted as zero.

2. FIELD SPECIFICATION F (FIXED POINT FIELD)

The form used for this is Fn.d, where n describes the total number of card columns containing this number (including the sign of the number, decimal point, and any blanks). If no sign is found, it is assumed positive. The d describes the number of card columns allocated to the right of the decimal point. When punching data in this field, the use of the decimal point is optional. If a decimal point is included, it will override the "d" in the format specification, and the number will be read as it is punched. If it is not punched, the computer will automatically assign one in the position defined in the field specification. The user is responsible for placing the number in the field so that the decimal point will be assigned properly. The user should not attempt punching integer data in fixed point fields without a clear understanding of the FORTRAN language. Blanks in the field are interpreted as zero.

3. FIELD SPECIFICATION A (ALPHANUMERIC)

The form used for this is An, where n describes the total number of card columns containing these characters. This specification allows the user to input alphanumeric information (letters and numbers and other special characters) for use in labeling and titles. The user should be aware that certain special characters, such as an ampersand (&), cannot be represented in some computers. It is suggested, therefore, that the user consult documentation for his computer concerning the available character set.

4. FIELD SPECIFICATION H (HOLLERITH)

The form used for this is nH, where n describes the total number of characters following the H. These characters, not including H, will be stored in a particular computer word (variable) and is used by the AQAM to reassign aircraft and engine names. The field width n should not exceed 8 (see appendix A).

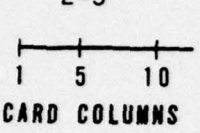
5. FIELD SPECIFICATION X (BLANK)

The form used for this is nX, where n describes the total number of card columns to leave blank.

Examples of various format specifications are included below to ensure an understanding of format usage.

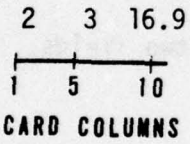
Example 1:

Numbers to be punched	Format
2, -3	(I4,I2)

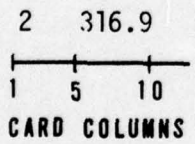


Example 2:

Numbers to be punched	Format
2, 3, 16.9	(I2,I4,F6.2)

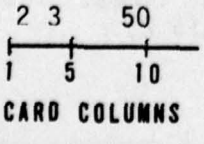


or



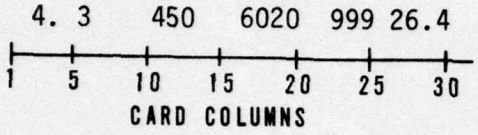
Example 3:

Numbers to be punched	Format
2, 3, 50	(2I2,4X,I2)



Example 4:

Numbers to be punched	Format*
4., 3, 4, 50, 60, 20 999, 26.4	(F4.2,3(I2,I5),F5.2)



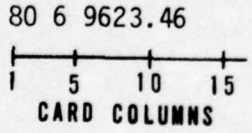
Example 5:

Numbers to be punched	Format
304, -20, 40	(2I2,I5)

Numbers 304 and -20 are too large to be punched in the first two fields.

Example 6:

Numbers to be punched	Format
80, 6, 9623.46	(2I2,F8.3)



*Repetition number "3" in the format specification indicates that the portion of the format enclosed in parentheses is to be repeated three times. Therefore, this format is equivalent to FORMAT (F4.2,I2,I5,I2,I5,I2,I5,F5.2).

Example 7:

Numbers to be punched	Format
29., .7693, .2	(I2,2X,2F4.4)

```
 29  7693 .20
|---+---+---|
1   5   10
CARD COLUMNS
```

or

```
 29  76932000
|---+---+---|
1   5   10
CARD COLUMNS
```

Example 8:

Numbers to be punched	Format
0., 3.0, 4	(F8.2,I4,F4.3)

```
                3  4.
|---+---+---+---|
1   5   10  15
CARD COLUMNS
```

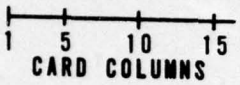
or

```
      0.   34
|---+---+---+---|
1   5   10  15
CARD COLUMNS
```

Example 9:

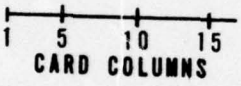
Numbers to be punched	Format
2001, 97.632, 9000	(I4,2F6.0)

200197.632 9000.



or

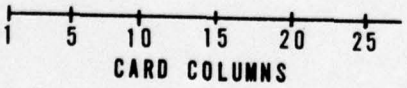
200197.532 9000



Example 10:

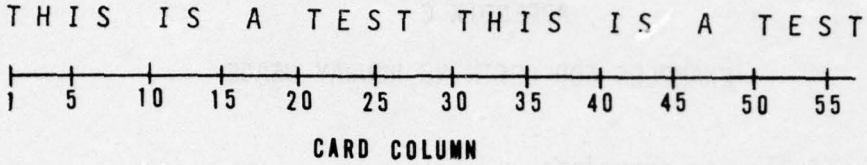
Characters to be punched	Format*
THIS IS A TEST THIS IS A TEST	(80A1)

THIS IS A TEST THIS IS A TEST



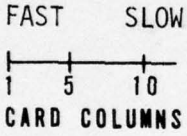
*Since all 80 card columns are utilized in this A field, the user has the freedom to place or space the characters as he pleases.

or



Example 11:

Characters to be punched	Format
FAST, SLOW	(2(A4,4X))



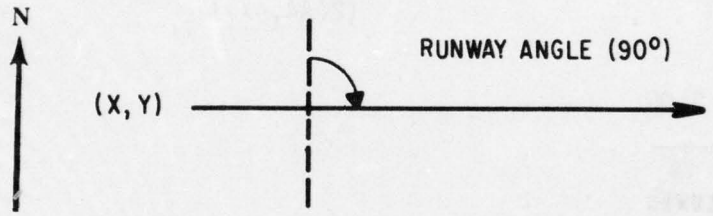
APPENDIX C

EXAMPLES FOR DEFINING RUNWAY USAGE

Consider the following examples:

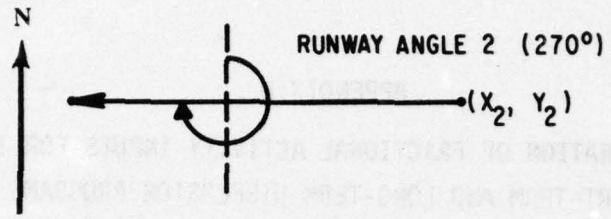
Example 1:

Aircraft always take off and land from west to east on this runway. This runway is not wind dependent; thus, a special case wind usage is not defined. This runway would be defined as follows:



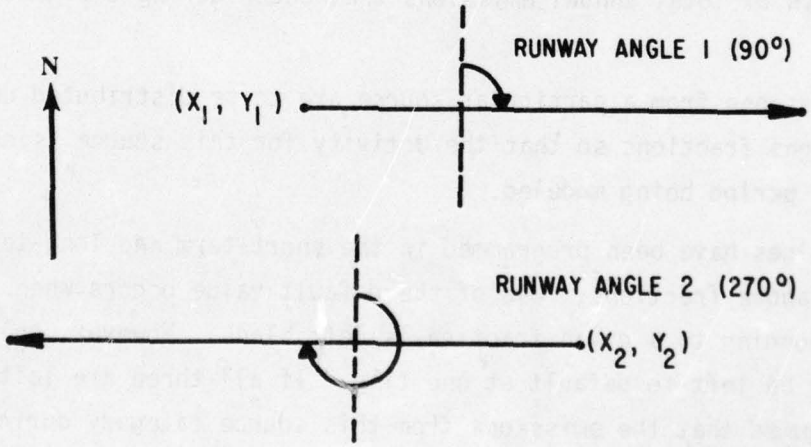
Example 2:

Aircraft take off and land on this runway from west to east for all winds except those directly from the west. During a west wind, aircraft take off and land from east to west. The runway usage is wind direction dependent only. Special case wind usage is not defined because a change in aircraft direction is affected only by changes in wind direction. Velocity is not considered. Two overlapping runways must be defined. The first would be described as being used during all wind conditions except a west wind. The second (the same strip of pavement as the first) would overlap the first and would be described as being used only during west wind directions.



Example 3:

Aircraft take off and land on this runway from west to east for all winds except those directly from the west with a velocity of greater than 10 knots. This case is similar to example 2 except that runway usage is not dependent simply on wind direction; rather, it is dependent on a combination of wind direction and velocity. This combination defines a special case runway use condition. As in example 2, two overlapping runways are defined. The first is described as being used during winds from all directions but is not used during a special case condition. The second is described as being unused for all wind directions but used during a special case condition.



A runway usage can be dependent on more than one wind direction or special case condition at the same time. In addition, runway usage can be dependent on both wind direction and a special case condition.

APPENDIX D

EXPLANATION OF FRACTIONAL ACTIVITY INPUTS FOR THE SHORT-TERM AND LONG-TERM DISPERSION PROGRAMS

The fractional activity for airbase and environ sources is defined for this period only if the temporal distribution input indicator is 0 (table 18). Activity fractions are input for each environ or airbase source type and these fractions define the activity of all sources in this category. For example, if activity fractions are input for test cells, these fractions would be used to describe the activity of all test cells on the base. The fractions used to describe the source activity are listed below.

1. Fraction of total daily emissions that occur during the hour being defined.

2. Fraction of total weekly emissions that occur during the portion of the week being defined (weekend or weekday).

3. Fraction of total annual emissions that occur during the month being defined.

If the emissions from a particular source are to be distributed uniformly, the model assigns fractions so that the activity for this source is constant throughout the period being modeled.

Default values have been programmed in the short-term and long-term programs for the above fractions. Use of the default value occurs when the card column corresponding to a given fraction is left blank. However, only one or two values may be left to default at one time. If all three are left blank, it will be assumed that the emissions from this source category during this month, week, and hour are ZERO.

The aircraft, vehicle and fuel processing activity fractions are defined in the source inventory program. The definitions are accomplished through default values or namelist reassignment during the execution of the source inventory (see appendix A). These fractional values are passed to the dispersion codes via the source emission data file and are used in the dispersion

calculations involving aircraft or airbase and environ vehicles. The default fractional activity for the short-term and long-term codes is listed below.

DEFAULT ACTIVITY FRACTIONS

Airbase Points

Training Fires	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times)
Test Cells	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times)
Run-up Stands	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times)
Power Plants	Month=1/12 Day=1/7 Hour=1/24
Incinerators	Month=1/12 Day=1/7 Hour=1/24

Airbase Areas

Hydrocarbon Working Loss	Activity distributed according to the source inventory fuel distribution fractions.
Hydrocarbon Breathing Loss	Activity distributed according to the source inventory fuel distribution fractions.
Hydrocarbon Losses from Tank Truck Parking	Activity distributed according to the source inventory fuel distribution fractions.
Hydrocarbon Losses from "Other" Sources	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times)
Space Heating	Activity distributed according to the degree day method.
Off-Road Vehicle	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times)
Military Vehicle Parking	Activity distributed according to the source inventory military vehicular distribution fractions.
Civilian Vehicle Parking	Activity distributed according to the source inventory civilian vehicular distribution fractions.

Airbase Lines	
Military Vehicle Lines	Activity distributed according to the source inventory military vehicular distribution fractions.
Civilian Vehicle Lines	Activity distributed according to the source inventory civilian vehicular distribution fractions.
"Other" Lines	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times).
Environ Points	
Environ Points	Month=1/12 Day=1/7 Hour=1/24
Environ Areas	
Stationary Areas	Activity distributed according to the degree day method.
Mobile Areas	Activity distributed according to the source inventory civilian vehicular distribution fractions.
EPA Land Use Areas	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times).
Environ Lines	
Roadway Lines	Activity distributed according to the source inventory civilian vehicle distribution fractions.
Nonroadway Lines	Month=1/12 Day=1/7 Hour=1/12 (0600-1800), (0 all other times.

APPENDIX E

EXAMPLE OF A COMPLETED SOURCE INVENTORY, SHORT-TERM AND LONG-TERM INPUT DATA SETS

All data sets within a source inventory input data deck must be identified by a card preceding the data set which contains the data set number. Although the format for the data set identifier is free, certain rules must be followed in punching it. They are as follows:

1. The number identifying the data set must be contained in Card Columns 1 through 9.

2. A data set number must be preceded by at least one asterisk (*).

The user may precede the data set number with as many asterisks as he pleases. The data set number may follow the asterisk or asterisks immediately or there may be other characters imbedded between. The columns following the data set number and through Column 80 can be used for a more complete literal description of the data set.

The AQAM Edit Program decodes the data set identifiers within the source inventory data to determine the data set to be edited. Also, the source inventory program reads the identifier card before each data set is processed. It is therefore essential that all data set identifiers be properly punched and placed within the source inventory input data deck before execution is attempted.

Data sets within the short-term and long-term decks do not require data set identifiers. The user can, however, at his discretion include identifiers throughout dispersion code input data. A special routine has been included in the short-term and long-term codes which performs, as a primary step in execution, an editing process which reads all input data, recognizes and removes all properly punched data set identifiers and recreates the input file. This operation is performed automatically by both dispersion programs and is transparent to the user. This system allows the user to develop and implement a personalized identification scheme and prevents unnecessary errors which would result in the attempts to place the identifiers throughout the dispersion input decks.

The following samples illustrate the structure of AQAM source inventory, short-term, and long-term input data decks.

SAMPLE 1

SOURCE INVENTORY INPUT

NELLIS AIR FORCE BASE

```
*1              TITLE INFORMATION
NELLIS AFB
26 MAY 1976
   1
NEW CONTROL TOWER                          36  14    9.0 115  01  35.04011.711 677.361
   4
2010 62112        T-2 TYPE TEST CELLS
2011 62112        T-2 TYPE TEST CELLS
2015 J-85         TEST STAND
2016 TF-30        TEST STAND
2017NEAR 61635    F-4, T-38 TRIM PAD
2018NEAR 61635    F-111 TRIM PAD
2019 NEAR 61635   F-5 TRIM PAD
2020 61635        F-111 SOUND SUPRESSOR: VERTICAL EXHAUST
2021NEAR 61635    F-4 SOUND SUPRESSOR: VERTICAL EXHAUST
*2              NAMELIST(EGDATA,ACDATA,OSDATA)
 $EGDATA
 EGFF(1,1)=1.131,  EGFF(2,1)=2.720,  EGFF(3,1)=8.921,   EGFF(4,1)=32.238,
 EGFF(1,6)=.453,   EGFF(2,6)=1.462,  EGFF(3,6)=2.630,   EGFF(4,6)=8.323,
 EGFF(1,8)=1.134,  EGFF(2,8)=1.500,  EGFF(3,8)=11.909,
 EGFF(1,9)=.593,   EGFF(2,9)=.827,   EGFF(3,9)=1.967,
 EGFF(1,14)=.231,  EGFF(2,14)=.696,  EGFF(3,14)=1.095,
 EGFF(1,22)=1.134, EGFF(2,22)=1.500, EGFF(3,22)=11.909,
 EGFF(1,23)=.459,  EGFF(2,23)=1.423, EGFF(3,23)=2.456,
 EGFF(1,25)=.959,  EGFF(2,25)=7.37,  EGFF(3,25)=8.755,  EGFF(4,25)=8.755,
 EGEMFC(1,1,1)=56.74,EGEMFC(2,1,1)=10.73,EGEMFC(3,1,1)=2.47,EGEMFC(4,1,1)=.500,
 EGEMFC(1,2,1)=11.40,EGEMFC(2,2,1)=1.33, EGEMFC(3,2,1)=4.25,EGEMFC(4,2,1)=2.222,
 EGEMFC(1,3,1)=2.25, EGEMFC(2,3,1)=0.22, EGEMFC(3,3,1)=8.94,EGEMFC(4,3,1)=2.361,
 EGEMFC(1,4,1)=4.00, EGEMFC(2,4,1)=0.01, EGEMFC(3,4,1)=3.11,EGEMFC(4,4,1)=0.154,
 EGEMFC(1,1,5)=179.57,EGEMFC(2,1,6)=29.90,EGEMFC(3,1,6)=1.26,
 EGEMFC(4,1,5)=0.013,
 EGEMFC(1,2,5)=43.34,EGEMFC(2,2,6)=3.37, EGEMFC(3,2,6)=2.32,EGEMFC(4,2,6)=0.017,
 EGEMFC(1,3,5)=24.33,EGEMFC(2,3,5)=0.84, EGEMFC(3,3,5)=2.68,EGEMFC(4,3,5)=0.018,
 EGEMFC(1,4,6)=26.04,EGEMFC(2,4,6)=0.07, EGEMFC(3,4,6)=1.99,EGEMFC(4,4,6)=0.008,
 EGEMFC(1,1,8)=56.73,EGEMFC(2,1,8)=22.98,EGEMFC(3,1,8)=2.95,EGEMFC(4,1,8)=0.3,
 EGEMFC(1,2,8)=38.50,EGEMFC(2,2,8)=12.90,EGEMFC(3,2,8)=3.75,EGEMFC(4,2,8)=1.4,
 EGEMFC(1,3,8)=0.59, EGEMFC(2,3,8)=0.18, EGEMFC(3,3,8)=28.52,
 EGEMFC(4,3,8)=1.5,
 EGEMFC(1,1,9)=14.01,EGEMFC(2,1,9)=10.39,EGEMFC(3,1,9)=6.17,EGEMFC(4,1,9)=0.611,
 EGEMFC(1,2,9)=5.08, EGEMFC(2,2,9)=4.80, EGEMFC(3,2,9)=6.46,EGEMFC(4,2,9)=1.042,
 EGEMFC(1,3,9)=2.00, EGEMFC(2,3,9)=2.25, EGEMFC(3,3,9)=9.26,EGEMFC(4,3,9)=0.565,
 EGEMFC(1,1,14)=127.17, EGEMFC(2,1,14)=19.50, EGEMFC(3,1,14)=1.53,
 EGEMFC(4,1,14)=.729,
 EGEMFC(1,2,14)=49.08,  EGEMFC(2,2,14)=1.29,  EGEMFC(3,2,14)=2.67,
 EGEMFC(4,2,14)=.617,
 EGEMFC(1,3,14)=31.32,  EGEMFC(2,3,14)=0.50,  EGEMFC(3,3,14)=3.60,
 EGEMFC(4,3,14)=.020,
 EGEMFC(1,1,22)=56.73,  EGEMFC(2,1,22)=22.98, EGEMFC(3,1,22)=2.95,
 EGEMFC(4,1,22)=.021,
 EGEMFC(1,2,22)=38.50,  EGEMFC(2,2,22)=12.90, EGEMFC(3,2,22)=3.75,
 EGEMFC(4,2,22)=.016,
 EGEMFC(1,3,22)=0.59,   EGEMFC(2,3,22)=0.18,  EGEMFC(3,3,22)=28.52,
 EGEMFC(4,3,22)=.009,
 EGEMFC(1,1,23)=70.91,  EGEMFC(2,1,23)=9.85,  EGEMFC(3,1,23)=1.49,
 EGEMFC(4,1,23)=.026,
 EGEMFC(1,2,23)=14.50,  EGEMFC(2,2,23)=0.32,  EGEMFC(3,2,23)=3.09,
 EGEMFC(4,2,23)=.155,
 EGEMFC(1,3,23)=3.68,   EGEMFC(2,3,23)=0.09,  EGEMFC(3,3,23)=4.71,
 EGEMFC(4,3,23)=.157,
 EGEMFC(5,1,23)=1.0, EGEMFC(5,2,23)=1.0,  EGEMFC(5,3,23)=1.0,
 EGEMFC(1,1,25)=50.0, EGEMFC(1,2,25)=6.6, EGEMFC(1,3,25)=1.2,EGEMFC(1,4,25)=1.2,
```

```
EGEMFC(2,1,25)=9.6,  EGEMFC(2,2,25)=1.4, EGEMFC(2,3,25)=.6, EGEMFC(2,4,25)=.60,
EGEMFC(4,1,25)=.6,   EGEMFC(4,2,25)=2.7, EGEMFC(4,3,25)=2.5,EGEMFC(4,4,25)=2.5,
EGEMFC(5,1,25)=1.0,  EGEMFC(5,2,25)=1.0, EGEMFC(5,3,25)=1.0,EGEMFC(5,4,25)=1.0,
EGNAME(23)=3HJ60,
IDACEG(33)=23,IEGABF(23)=0,IACABF(33)=0,
EGNAME(25)=5HJT-8D,
IDACEG(20)=25,IEGABF(25)=0,IACABF(20)=0,
$
$ACDATA
APSPD1(14)=556.0,APSPD1(12)=556.0,DSCNT1(32)=5.0, APPHT2(12)=0.46,
APPHT2(13)=0.46,ASCNT1(14)=10.0,ASCNT1(13)=10.0,COSPD1(14)=648.6,
COSPD2(14)=648.6,                    COSPD2(12)=648.6,COSPD2(13)=602.3,
COHT1(12)=.4572,COHT1(13)=.3048,TXISPD(14)=27.8,TXISPD(12)=27.8,
TXISPD(13)=9.3,
$
$DSDATA
ACMO(1,14)=.078,ACMO(2,14)=.078,ACMO(3,14)=.089,ACMO(4,14)=.089,
ACMO(5,14)=.078,ACMO(6,14)=.089,ACMO(7,14)=.089,ACMO(8,14)=.089,
ACMO(9,14)=.089,ACMO(10,14)=.089,ACMO(11,14)=.089,ACMO(12,14)=.054,
ACMO(1,13)=.078,ACMO(2,13)=.078,ACMO(3,13)=.089,ACMO(4,13)=.089,
ACMO(5,13)=.078,ACMO(6,13)=.089,ACMO(7,13)=.089,ACMO(8,13)=.089,
ACMO(9,13)=.089,ACMO(10,13)=.089,ACMO(11,13)=.089,ACMO(12,13)=.054,
ACMO(1,12)=.075,ACMO(2,12)=.075,ACMO(3,12)=.085,ACMO(4,12)=.085,
ACMO(5,12)=.085,ACMO(6,12)=.085,ACMO(7,12)=.085,ACMO(8,12)=.085,
ACMO(9,12)=.085,ACMO(10,12)=.085,ACMO(11,12)=.085,ACMO(12,12)=.085,
ACMO(1,32)=.078,ACMO(2,32)=.078,ACMO(3,32)=.089,ACMO(4,32)=.089,
ACMO(5,32)=.078,ACMO(6,32)=.089,ACMO(7,32)=.089,ACMO(8,32)=.089,
ACMO(9,32)=.089,ACMO(10,32)=.089,ACMO(11,32)=.089,ACMO(12,32)=.054,
ACMO(1,31)=.087,ACMO(2,31)=.084,ACMO(3,31)=.084,ACMO(4,31)=.053,
ACMO(5,31)=.11,ACMO(6,31)=.064,ACMO(7,31)=.068,ACMO(8,31)=.098,
ACMO(9,31)=.078,ACMO(10,31)=.089,ACMO(11,31)=.110,ACMO(12,31)=.075,
ACMO(1,21)=.083,ACMO(2,21)=.083,ACMO(3,21)=.083,ACMO(4,21)=.075,
ACMO(5,21)=.11,ACMO(6,21)=.070,ACMO(7,21)=.075,ACMO(8,21)=.083,
ACMO(9,21)=.088,ACMO(10,21)=.079,ACMO(11,21)=.088,ACMO(12,21)=.083,
ACMO(1,24)=.021,ACMO(2,24)=.070,ACMO(3,24)=.062,ACMO(4,24)=.110,
ACMO(5,24)=.074,ACMO(6,24)=.25,ACMO(7,24)=.142,ACMO(8,24)=.025,
ACMO(9,24)=.049,ACMO(10,24)=.049,ACMO(11,24)=.099,ACMO(12,24)=.049,
ACDY(1,14)=.2,ACDY(1,13)=.2,ACDY(1,12)=.2,ACDY(1,32)=.2,
ACDY(1,31)=.14,ACDY(1,21)=.14,ACDY(1,24)=.12,
ACDY(2,14)=0.0,ACDY(2,13)=0.0,ACDY(2,12)=0.0,ACDY(2,32)=0.0,
ACDY(2,31)=.15,ACDY(2,21)=.15,ACDY(2,24)=.2,
ACHR(1,24)=0.0,ACHR(2,24)=0.0,ACHR(3,24)=0.0,ACHR(4,24)=0.0,
ACHR(5,24)=0.0,ACHR(6,24)=0.0,ACHR(7,24)=0.1,ACHR(8,24)=0.1,
ACHR(9,24)=0.1,ACHR(10,24)=0.1,ACHR(11,24)=0.1,ACHR(12,24)=0.1,
ACHR(13,24)=0.1,ACHR(14,24)=0.1,ACHR(15,24)=0.1,ACHR(16,24)=0.02,
ACHR(17,24)=0.02,ACHR(18,24)=0.02,ACHR(19,24)=0.02,ACHR(20,24)=0.02,
ACHR(21,24)=0.0,ACHR(22,24)=0.0,ACHR(23,24)=0.0,ACHR(24,24)=0.0,
ACHR(1,31)=0.0,ACHR(2,31)=0.0,ACHR(3,31)=0.0,ACHR(4,31)=0.0,
ACHR(5,31)=0.0,ACHR(6,31)=0.0,ACHR(7,31)=0.1,ACHR(8,31)=0.1,
ACHR(9,31)=0.1,ACHR(10,31)=0.1,ACHR(11,31)=0.1,ACHR(12,31)=0.1,
ACHR(13,31)=0.1,ACHR(14,31)=0.1,ACHR(15,31)=0.1,ACHR(16,31)=0.02,
ACHR(17,31)=0.02,ACHR(18,31)=0.02,ACHR(19,31)=0.02,ACHR(20,31)=0.02,
ACHR(21,31)=0.0,ACHR(22,31)=0.0,ACHR(23,31)=0.0,ACHR(24,31)=0.0,
ACHR(1,21)=0.0,ACHR(2,21)=0.0,ACHR(3,21)=0.0,ACHR(4,21)=0.0,
ACHR(5,21)=0.0,ACHR(6,21)=0.0,ACHR(7,21)=0.1,ACHR(8,21)=0.1,
ACHR(9,21)=0.1,ACHR(10,21)=0.1,ACHR(11,21)=0.1,ACHR(12,21)=0.1,
ACHR(13,21)=0.1,ACHR(14,21)=0.1,ACHR(15,21)=0.1,ACHR(16,21)=0.02,
ACHR(17,21)=0.02,ACHR(18,21)=0.02,ACHR(19,21)=0.02,ACHR(20,21)=0.02,
ACHR(21,21)=0.0,ACHR(22,21)=0.0,ACHR(23,21)=0.0,ACHR(24,21)=0.0,
ACHR(1,12)=0.0,ACHR(2,12)=0.0,ACHR(3,12)=0.0,ACHR(4,12)=0.0,
ACHR(5,12)=0.0,ACHR(6,12)=0.0,ACHR(7,12)=0.1,ACHR(8,12)=0.1,
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ACHR(9,12)=0.1,ACHR(10,12)=0.1,ACHR(11,12)=0.1,ACHR(12,12)=0.1,
ACHR(13,12)=0.1,ACHR(14,12)=0.1,ACHR(15,12)=0.1,ACHR(16,12)=0.02,
EGEMFC(3,1,25)=2.0,  EGEMFC(3,2,25)=2.7, EGEMFC(3,3,25)=4.3,EGEMFC(3,4,25)=4.3,
ACHR(17,12)=0.02,ACHR(18,12)=0.02,ACHR(19,12)=0.02,ACHR(20,12)=0.02,
ACHR(21,12)=0.0,ACHR(22,12)=0.0,ACHR(23,12)=0.0,ACHR(24,12)=0.0,
ACHR(1,32)=0.0,ACHR(2,32)=0.0,ACHR(3,32)=0.0,ACHR(4,32)=0.0,
ACHR(5,32)=0.0,ACHR(6,32)=0.0,ACHR(7,32)=0.1,ACHR(8,32)=0.1,
ACHR(9,32)=0.1,ACHR(10,32)=0.1,ACHR(11,32)=0.1,ACHR(12,32)=0.1,
ACHR(13,32)=0.1,ACHR(14,32)=0.1,ACHR(15,32)=0.1,ACHR(16,32)=0.02,
ACHR(17,32)=0.02,ACHR(18,32)=0.02,ACHR(19,32)=0.02,ACHR(20,32)=0.02,
ACHR(21,32)=0.0,ACHR(22,32)=0.0,ACHR(23,32)=0.0,ACHR(24,32)=0.0,
ACHR(1,13)=0.0,ACHR(2,13)=0.0,ACHR(3,13)=0.0,ACHR(4,13)=0.0,
ACHR(5,13)=0.0,ACHR(6,13)=0.0,ACHR(7,13)=0.1,ACHR(8,13)=0.1,
ACHR(9,13)=0.1,ACHR(10,13)=0.1,ACHR(11,13)=0.1,ACHR(12,13)=0.1,
ACHR(13,13)=0.1,ACHR(14,13)=0.1,ACHR(15,13)=0.1,ACHR(16,13)=0.02,
ACHR(17,13)=0.02,ACHR(18,13)=0.02,ACHR(19,13)=0.02,ACHR(20,13)=0.02,
ACHR(21,13)=0.0,ACHR(22,13)=0.0,ACHR(23,13)=0.0,ACHR(24,13)=0.0,
ACHR(1,14)=0.0,ACHR(2,14)=0.0,ACHR(3,14)=0.0,ACHR(4,14)=0.0,
ACHR(5,14)=0.0,ACHR(6,14)=0.0,ACHR(7,14)=0.08,ACHR(8,14)=0.08,
ACHR(9,14)=0.08,ACHR(10,14)=0.08,ACHR(11,14)=0.08,ACHR(12,14)=0.08,
ACHR(13,14)=0.08,ACHR(14,14)=0.08,ACHR(15,14)=0.08,ACHR(16,14)=0.08,
ACHR(17,14)=0.04,ACHR(18,14)=0.04,ACHR(19,14)=0.04,ACHR(20,14)=0.04,
ACHR(21,14)=0.04,ACHR(22,14)=0.0,ACHR(23,14)=0.0,ACHR(24,14)=0.0,
VHMLMO(1)=.08333,VHMLMO(2)=.08333,VHMLMO(3)=.08333,VHMLMO(4)=.08333,
VHMLMO(5)=.08333,VHMLMO(6)=.08333,VHMLMO(7)=.08333,VHMLMO(8)=.08333,
VHMLMO(9)=.08333,VHMLMO(10)=.08333,VHMLMO(11)=.08333,VHMLMO(12)=.08333,
VHMLOY(1)=0.2,VHMLOY(2)=0.0,
VHMLHR(1)=0.0,VHMLHR(2)=0.0,VHMLHR(3)=0.0,VHMLHR(4)=0.0,
VHMLHR(5)=0.0,VHMLHR(6)=0.0,VHMLHR(7)=0.1,VHMLHR(8)=0.1,
VHMLHR(9)=0.1,VHMLHR(10)=0.1,VHMLHR(11)=0.1,VHMLHR(12)=0.1,
VHMLHR(13)=0.1,VHMLHR(14)=0.1,VHMLHR(15)=0.1,VHMLHR(16)=0.0333,
VHMLHR(17)=0.0333,VHMLHR(18)=0.0333,VHMLHR(19)=0.0,VHMLHR(20)=0.0,
VHMLHR(21)=0.0,VHMLHR(22)=0.0,VHMLHR(23)=0.0,VHMLHR(24)=0.0,
CVABMO(1)=0.08333,CVABMO(2)=0.08333,CVABMO(3)=0.08333,CVABMO(4)=0.08333,
CVABMO(5)=0.08333,CVABMO(6)=0.08333,CVABMO(7)=0.08333,CVABMO(8)=0.08333,
CVABMO(9)=0.08333,CVABMO(10)=0.08333,CVABMO(11)=0.08333,CVABMO(12)=0.08333,
CVABOY(1)=0.1486,CVABOY(2)=0.1285,
CVABHR(1)=0.00136,CVABHR(2)=0.00136,CVABHR(3)=0.00136,CVABHR(4)=0.00136,
CVABHR(5)=0.00136,CVABHR(6)=0.00136,CVABHR(7)=0.0567,CVABHR(8)=0.0567,
CVABHR(9)=0.0567,CVABHR(10)=0.0624,CVABHR(11)=0.0624,CVABHR(12)=0.0624,
CVABHR(13)=0.0795,CVABHR(14)=0.0795,CVABHR(15)=0.0795,CVABHR(16)=0.0711,
CVABHR(17)=0.0711,CVABHR(18)=0.0711,CVABHR(19)=0.0391,CVABHR(20)=0.0391,
CVABHR(21)=0.0391,CVABHR(22)=0.0218,CVABHR(23)=0.0218,CVABHR(24)=0.0218,
FLMO(1,2)=.078,FLMO(2,2)=.074,FLMO(3,2)=.078,FLMO(4,2)=.083,
FLMO(5,2)=.101,FLMO(6,2)=.070,FLMO(7,2)=.083,FLMO(8,2)=.108,
FLMO(9,2)=.096,FLMO(10,2)=.073,FLMO(11,2)=.056,FLMO(12,2)=.100,
FLMO(1,3)=.088,FLMO(2,3)=.150,FLMO(3,3)=.099,FLMO(4,3)=.202,
FLMO(5,3)=.155,FLMO(6,3)=.131,FLMO(7,3)=.066,FLMO(8,3)=.011,
FLMO(9,3)=.038,FLMO(10,3)=0.0,FLMO(11,3)=.0008,FLMO(12,3)=.0518,
FLMO(1,1)=.08333,FLMO(2,1)=.08333,FLMO(3,1)=.08333,FLMO(4,1)=.08333,
FLMO(5,1)=.08333,FLMO(6,1)=.08333,FLMO(7,1)=.08333,FLMO(8,1)=.08333,
FLMO(9,1)=.08333,FLMO(10,1)=.08333,FLMO(11,1)=.08333,FLMO(12,1)=.08333,
FLMO(1,4)=.0833,FLMO(2,4)=.0833,FLMO(3,4)=.0833,FLMO(4,4)=.0833,
FLMO(5,4)=.0833,FLMO(6,4)=.0833,FLMO(7,4)=.0833,FLMO(8,4)=.0833,
FLMO(9,4)=.0833,FLMO(10,4)=.0833,FLMO(11,4)=.0833,FLMO(12,4)=.0833,
FLOY(1,2)=0.2,FLOY(2,2)=0.0,
FLOY(1,3)=0.2,FLOY(2,3)=0.0,
FLOY(1,1)=0.2,FLOY(2,1)=0.0,
FLOY(1,4)=0.2,FLOY(2,4)=0.0,
FLHR(1,1)=0.0,FLHR(2,1)=0.0,FLHR(3,1)=0.0,FLHR(4,1)=0.0,
FLHR(5,1)=0.0,FLHR(6,1)=0.0,FLHR(7,1)=0.0,FLHR(8,1)=0.0,
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FLHR(9,1)=0.125,FLHR(10,1)=0.125,FLHR(11,1)=0.125,FLHR(12,1)=0.125,
FLHR(13,1)=0.0,FLHR(14,1)=0.125,FLHR(15,1)=0.125,FLHR(16,1)=0.125,
FLHR(17,1)=0.125,FLHR(18,1)=0.0,FLHR(19,1)=0.0,FLHR(20,1)=0.0,
FLHR(21,1)=0.0,FLHR(22,1)=0.0,FLHR(23,1)=0.0,FLHR(24,1)=0.0,
FLHR(1,2)=0.0,FLHR(2,2)=0.0,FLHR(3,2)=0.0,FLHR(4,2)=0.0,
FLHR(5,2)=0.0,FLHR(6,2)=0.0,FLHR(7,2)=0.0,FLHR(8,2)=0.0,
FLHR(9,2)=0.125,FLHR(10,2)=0.125,FLHR(11,2)=0.125,FLHR(12,2)=0.125,
FLHR(13,2)=0.0,FLHR(14,2)=0.125,FLHR(15,2)=0.125,FLHR(16,2)=0.125,
FLHR(17,2)=0.125,FLHR(18,2)=0.0,FLHR(19,2)=0.0,FLHR(20,2)=0.0,
FLHR(21,2)=0.0,FLHR(22,2)=0.0,FLHR(23,2)=0.0,FLHR(24,2)=0.0,
FLHR(1,3)=0.0,FLHR(2,3)=0.0,FLHR(3,3)=0.0,FLHR(4,3)=0.0,
FLHR(5,3)=0.0,FLHR(6,3)=0.0,FLHR(7,3)=0.0,FLHR(8,3)=0.0,
FLHR(9,3)=0.125,FLHR(10,3)=0.125,FLHR(11,3)=0.125,FLHR(12,3)=0.125,
FLHR(13,3)=0.0,FLHR(14,3)=0.125,FLHR(15,3)=0.125,FLHR(16,3)=0.125,
FLHR(17,3)=0.125,FLHR(18,3)=0.0,FLHR(19,3)=0.0,FLHR(20,3)=0.0,
FLHR(21,3)=0.0,FLHR(22,3)=0.0,FLHR(23,3)=0.0,FLHR(24,3)=0.0,
FLHR(1,4)=0.0,FLHR(2,4)=0.0,FLHR(3,4)=0.0,FLHR(4,4)=0.0,
FLHR(5,4)=0.0,FLHR(6,4)=0.0,FLHR(7,4)=0.0,FLHR(8,4)=0.0,
FLHR(9,4)=0.125,FLHR(10,4)=0.125,FLHR(11,4)=0.125,FLHR(12,4)=0.125,
FLHR(13,4)=0.0,FLHR(14,4)=0.125,FLHR(15,4)=0.125,FLHR(16,4)=0.125,
FLHR(17,4)=0.125,FLHR(18,4)=0.0,FLHR(19,4)=0.0,FLHR(20,4)=0.0,
FLHR(21,4)=0.0,FLHR(22,4)=0.0,FLHR(23,4)=0.0,FLHR(24,4)=0.0,
$
*3              METEOROLOGICAL DATA
   67.28 2369.00 18.88       5.00   29.00
*4              AIRCRAFT AND RUNWAY TOTALS
   7   4    5    1  15
*5              AIRCRAFT ACTIVITY
       14     7442     7442     7025
       13     4215     4215      562
       12     6762     6762      588
       32     4215     4215     1686
       31     4180     4180        0
       21      915      915        0
       24      243      243        0
*6              AIRCRAFT PARKING AREAS
    1   3  675.40 4010.81    .180  675.58 4011.00    .180  675.67 4011.18    .180
    2   3  675.83 4011.37    .180  676.00 4011.55    .180  676.16 4011.74    .180
    3   3  676.32 4011.92    .180  676.48 4012.10    .180  676.63 4012.29    .180
    4   3  676.90 4012.58    .250  676.91 4012.83    .250  676.66 4012.90    .250
    5   2  678.31 4012.94    .060  678.31 4012.88    .060
*7              AIRCRAFT TAXIWAY PATH SEGMENTS
    1       675.85 4010.49                          675.61 4010.69
    2       675.61 4010.69                          675.63 4010.96
    3       675.63 4010.96                          675.58 4011.00
    4       676.09 4011.48                          675.63 4010.96
    5       676.09 4011.48                          676.00 4011.55
    6       676.56 4012.02                          676.09 4011.48
    7       676.56 4012.02                          676.47 4012.10
    8       676.77 4012.26                          676.56 4012.02
    9       676.91 4012.83                          676.77 4012.26
   10       676.95 4012.98                          676.91 4012.83
   11       677.64 4013.01                          676.95 4012.98
   12       677.85 4012.80                          677.64 4013.01
   13       677.85 4012.80                          678.29 4012.76
   14       678.29 4012.76                          678.31 4012.88
   15       677.85 4012.80                          675.85 4010.49
```

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*8                AIRCRAFT RUNWAY INFORMATION
  03        675.61 4010.69                                    40.94   3.0357
  03     000000000000000001
  03             372       211       338       211       209       46       12
  03             372       211       338       211       209       46       12
  03    5   5
0320 5              0         0         0         0         0         0      1.0
0320 5 3  12  13  14
0321 1             .9         0         0         0         0         0        0
0321 1 7  11  10   9   8   6   4   3
0322 2             .1         0         0       1.0         0         0        0
0322 2 6  11  10   9   8   6   5
0323 3              0       1.0       1.0         0         0         0        0
0323 3 5  11  10   9   8   7
0324 4              0         0         0         0       1.0       1.0        0
0324 4 2  11  10
0340 5              0         0         0         0         0         0      1.0
0340 5 4  14  13  15   1
0341 1             .9         0         0         0         0         0        0
0341 1 2   3   2
0342 2             .1         0         0       1.0         0         0        0
0342 2 3   5   4   2
0343 3              0       1.0       1.0         0         0         0        0
0343 3 4   7   6   4   2
0344 4              0         0         0         0       1.0       1.0        0
0344 4 5   9   8   6   4   2
  04        675.85 4010.49                                    40.94   3.0153
  04     000000000000000001
  04             372       211       338       211       209       46       12
  04             372       211       338       211       209       46       12
  04    5   5
0415 5              0         0         0         0         0         0      1.0
0415 5 2  13  14
0416 1             .9         0         0         0         0         0        0
0416 1 8  12  11  10   9   8   6   4   3
0417 2             .1         0         0       1.0         0         0        0
0417 2 7  12  11  10   9   8   6   5
0418 3              0       1.0       1.0         0         0         0        0
0418 3 6  12  11  10   9   8   7
0419 4              0         0         0         0       1.0       1.0        0
0419 4 3  12  11  10
0435 5              0         0         0         0         0         0      1.0
0435 5 3  14  13  15
0436 1             .9         0         0         0         0         0        0
0436 1 3   3   2   1
0437 2             .1         0         0       1.0         0         0        0
0437 2 4   5   4   2   1
0438 3              0       1.0       1.0         0         0         0        0
0438 3 5   7   6   4   2   1
0439 4              0         0         0         0       1.0       1.0        0
0439 4 6   9   8   6   4   2   1
  21        677.85 4012.80                                   220.94   3.0153
  21     11111111111111111110
  21           3349      1897      3043      1897      1881      412      109
  21           3349      1897      3043      1897      1881      412      109
  21    5   5
2110 5              0         0         0         0         0         0      1.0
2110 5 3  15  13  14
2111 1             .9         0         0         0         0         0        0
2111 1 3   1   2   3
2112 2             .1         0         0       1.0         0         0        0
2112 2 4   1   2   4   5
```

```
2113 3          0       1.0       1.0        0        0        0        0
2113 3 5   1    2    4    6    7
2114 4          0         0         0        0      1.0      1.0        0
2114 4 6   1    2    4    6    8    9
2130 5          0         0         0        0        0        0      1.0
2130 5 2  14   13
2131 1         .9         0         0        0        0        0        0
2131 1 8   3    4    5    8    9   10   11   12
2132 2         .1         0         0      1.0        0        0        0
2132 2 7   5    6    8    9   10   11   12
2133 3          0       1.0       1.0        0        0        0        0
2133 3 6   7    8    9   10   11   12
2134 4          0         0         0        0      1.0      1.0        0
2134 4 3  10   11   12
  22       677.65 4013.01                                  220.94   3.0357
  22     1111111111111111110
  22          3349     1897     3043     1897     1881      412      109
  22          3349     1897     3043     1897     1881      412      109
  22    5    5
2225 5          0         0         0        0        0        0      1.0
2225 5 4   1   15   13   14
2225 1         .9         0         0        0        0        0        0
2225 1 2   2    3
2227 2         .1         0         0      1.0        0        0        0
2227 2 3   2    4    5
2228 3          0       1.0       1.0        0        0        0        0
2228 3 4   2    4    6    7
2229 4          0         0         0        0      1.0      1.0        0
2229 4 5   2    4    6    8    9
2245 5          0         0         0        0        0        0      1.0
2245 5 3  14   13   12
2246 1         .9         0         0        0        0        0        0
2246 1 7   3    4    5    8    9   10   11
2247 2         .1         0         0      1.0        0        0        0
2247 2 6   5    6    8    9   10   11
2248 3          0       1.0       1.0        0        0        0        0
2248 3 5   7    8    9   10   11
2249 4          0         0         0        0      1.0      1.0        0
2249 4 2  10   11
*9                AEROSPACE GROUND EQUIPMENT
     8.13   0.476  0.0245  0.0569  0.0054
     6.61   0.387  0.0200  0.0463  0.0044
     7.14   0.419  0.0216  0.0500  0.0048
     6.42   0.376  0.0194  0.0449  0.0042
    0.150  0.0088 .000454 0.00115  0.0001
    0.150  0.0088 .000454 0.00115  0.0001
    0.150  0.0088 .000454 0.00115  0.0001
   0.5675 0.05675  0.1135 0.05675 0.01135
     0.61    .061   0.122   0.061  0.0122
     0.66    .066   0.132   0.066  0.0132
     0.61    .061   0.122   0.061  0.0122
    0.264  0.0263  0.0517  0.0263 0.00517
    0.264  0.0263  0.0517  0.0263 0.00517
    0.264  0.0263  0.0517  0.0263 0.00517
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
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AD-A033 001 AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX F/G 13/2
AIR QUALITY ASSESSMENT MODEL (AQAM) DATA REDUCTION AND OPERATIO--ETC(U)
OCT 76 D F MENICUCCI

UNCLASSIFIED AFWL-TR-75-307 NL

3 OF 3
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A033001

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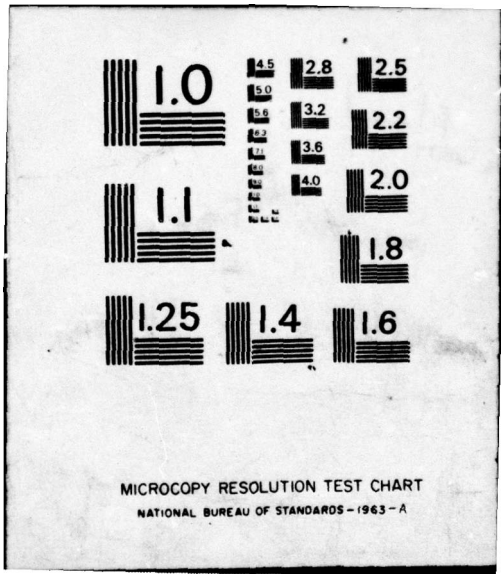
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1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

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         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
      8.13    0.476   0.0245   0.0569   0.0054
      6.62    0.388   0.0200   0.0463   0.0044
      7.15    0.418   0.0215   0.0500   0.0047
      6.42    0.376   0.0194   0.0450   0.0043
     0.151   0.0088     4.54  0.00115   0.0001
     0.151   0.0088     4.54  0.00115   0.0001
     0.151   0.0088     4.54  0.00115   0.0001
    0.5675  0.05675   0.1135  0.05675  0.01135
      0.61    0.061    0.122    0.061   0.0122
      0.66    0.066    0.132    0.066   0.0132
      0.61    0.061    0.122    0.061   0.0122
     0.263   0.0263   0.0517   0.0263  0.00517
     0.263   0.0263   0.0517   0.0263  0.00517
     0.263   0.0263   0.0517   0.0263  0.00517
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
         0        0        0        0        0
*10              AIRCRAFT REFUELING AND FUEL VENTING TOTALS
                      2        2        2        2        2        2        2
    7        15897.0   3028.0  13247.5   1779.0   1892.5  11356.0  37850.0
    7          1.568   0.7559   0.7559   0.7559    1.020    1.020    1.020
    1            0.0
    1            0.0
*11              VEHICLE AGE DISTRIBUTION
   1                0    01976
  1    0  00000000000040000400080008000400240008000400000000000000000000000
  2    0  00000508101706780508090401131695214809040904045201690000000000000
  3    0  00000909000006820000022702271818409218180227000000000000000000000
```

```
 4    0  00000000000003450345000003450000655113790000034506900000000000000
 5    0  00000000000000000000000000000000666700000000250008330000000000000
 6    0  00000190048805960759056903521789222208400921054207320000000000000
 1    0  11191380115714551194037303730634078306340261052201150000000000000
 2    1
 3    1
 4    1
 5    1
 6    1
*12              NUMBER OF AIRBASE POINT SOURCES
   1
*13              TRAINING FIRE POINT SOURCES
   1
2001    3  676.92 4011.03    1.00                                    24.     300.
*14              TEST CELL POINT SOURCES
   2
2010    1  676.72 4013.35                                    422.
2010    5   220.0     10.0     10.0     20.0     20.0
2011    1  676.71 4013.33                                    422.
2011    1    60.0     60.0       0.     36.0     24.0
*15              RUNUP STAND POINT SOURCES
   7
2015    1  676.67 4013.31                                   330.0
2015    6   324.0     45.0       0.     27.0     18.0
2016    1  676.66 4013.29                                   330.0
2016    5   220.0     10.0     10.0     20.0     20.0
2017    2  676.91 4013.49      2.0     30.0              330.
2017   15     60.      15.      15.      30.      15.
2017    6    164.      15.      15.      30.      15.
2018    1  676.97 4013.44      2.0     30.0              330.
2018    5    150.     19.0      6.2     22.8     13.8
2019    1  676.94 4013.45      2.0     30.0              330.
2019    6    346.      15.      15.      30.      15.
2020    1  677.09 4013.34     7.32                       330.    12.5      5.5     7.32
2020    5    150.     19.0      6.2     22.8     13.8
2021    1  676.95 4013.33     6.91                       330.    12.5      6.0     6.91
2021   15     84.      15.      15.      30.      15.
*16              POWER PLANT POINT SOURCES
   0
*17              INCINERATOR POINT SOURCES
   0
*18              PETROLEUM STORAGE TANK POINT SOURCES
   4
2050    0  675.73 4012.97   12.92      1.0      1.0
2050       2   1109271.03179.000                      18.2888
2050    1
2051    0  675.66 4012.92   10.97      1.0      1.0
2051       2   154633.521589.000                      13.7160
2051    1
2052    0  675.63 4012.96   10.97      1.0      1.0
2052       2   154633.521589.000                      13.7160
2052    1
2053    0  675.68 4013.02   12.92      1.0      1.0
2053       3   14424.0002384.500                      15.8496
2053    1
*19              OTHER AIRBASE POINT SOURCES
   0
*20              AIRBASE AREA SOURCE GEOMETRIES
  27
3001       676.60 4012.44      3.0    150.0      1.0
```

```
3002      675.47 4012.98     3.0     200.0      1.0
3003      676.32 4012.93     1.0     150.0      1.0
3004      675.38 4011.13     1.0      50.0      1.0
3005      675.84 4011.57     1.0      50.0      1.0
3006      676.71 4013.48     1.0      25.0      1.0
3007      675.37 4011.82     1.0     100.0      1.0
3201      676.46 4012.95     3.0     100.0      1.0
3202      676.46 4012.85     3.0     100.0      1.0
3501      673.81 4012.50     5.0     600.0
3502      674.61 4011.40     5.0     600.0
3503      676.11 4012.20     5.0     300.0
3504      675.67 4012.05    10.0     700.0
4001      673.47 4013.09     0.5     278.0
4002      673.87 4013.14     0.5     370.0
4003      673.87 4012.59     0.5     740.0
4004      675.24 4013.14     0.5     280.0
4005      674.94 4012.02     0.5     285.0
4006      674.65 4011.45     0.5     860.0
4007      675.18 4012.06     0.5     205.0
4008      675.58 4012.55     0.5     278.0
4009      676.31 4012.79     0.5     735.0
4010      675.61 4012.10     0.5     660.0
4011      676.14 4012.18     0.5     490.0
4012      675.71 4011.55     0.5     455.0
4013      675.35 4011.14     0.5     340.0
4014      675.18 4011.68     0.5     205.0
*21             AIR BASE AREA SOURCES WITH HC FILLING,WORKING LOSSES AND SPILLAGE
  7
3001    3335.38218542.1  4424.6    977.2       0.      0.      0.
3001          0.      0.      0.      0.      0.      0.      0.      0.
3002          0.218542.1  4424.6      0.      0.      0.      0.
3002          0.      0.      0.      0.      0.      0.      0.    17.37
3003    2668.30       0.      0.      0.      0.      0.      0.
3003          0.      0.      0.      0.      0.      0.      0.      .21
3004     333.53 1358.90       0.      0.      0.      0.      0.
3004          0.      0.      0.      0.      0.      0.      0.     1.31
3005     333.53 1540.08       0.      0.      0.      0.      0.
3005          0.      0.      0.      0.      0.      0.      0.     1.45
3006          0. 1184.01       0.      0.      0.      0.      0.
3006          0.      0.      0.      0.      0.      0.      0.      .92
3007   32471.64       0.      0.      0.      0.      0.      0.
3007          0.      0.      0.      0.      0.      0.      0.     2.49
*22             STORAGE TANK HYDROCARBON BREATHING LOSS AREA SOURCES
  0
*23             PETROLEUM TANK TRUCK PARKING AREA SOURCES
  2
3201   2  12        18.92      .90     3.05
3202   2  13        18.92      .90     3.05
*24             MILITARY AND CIVILIAN VEHICLE HC BREATHING LOSSES
 14
4001   1 242        70.       0.5
4002   1 431        70.       0.5
4003   11736        70.       0.5
4004   1 252        70.       0.5
4005   1 263        70.       0.5
4006   12346        70.       0.5
4007   1 137        70.       0.5
4008   1 242        70.       0.5
4009   11674        70.       0.5
4009   4  41       150.       0.5
4010   11378        70.       0.5
4011   1 739        70.       0.5
```

```
4011    4  18        150.        0.5
4012    1 636         70.        0.5
4012    4  16        150.        0.5
4013    1 359         70.        0.5
4013    4   9        150.        0.5
4014    1 137         70.        0.5
*25              OTHER EVAPORATIVE HYDROCARBON SOURCES
   0
*26              SPACE HEATING AREA SOURCES
   4
3501   16    .0001    .0001     1.36    0
3502   16    .0001    .0001     2.55    0
3503   16    .0001    .0001     5.25    0
3504   14    .0001    .0001      .10    0
*27              OFF-ROAD VEHICLE AREA SOURCES
   0
*28              MILITARY MOTOR VEHICLE AREA SOURCES
   8
4007    3   15.        3.31    14.30     5.30     3.72     3.21     0.0
4007    1   1   1   1   1   0
4007    7
4008    3   20.        5.96    25.74     9.54     6.70     5.78     9.55
4008    2   6   2   2   2   0
4008   26
4009    3    5.       42.09   181.93    67.42    47.32    40.82    67.04
4009   14   40  17  15  12  21
4009  183
4010    3   20.       33.88   146.46    54.27    38.10    32.87    27.09
4010   11   32  14  12   9   0
4010  148
4011    3   15.       18.66    80.67    29.89    20.98    18.10    29.87
4011    6   18   8   6   5  10
4011   82
4012    3   15.       16.15    69.80    25.87    18.15    15.66    25.70
4012    5   15   7   6   5   8
4012   70
4013    3   15.        9.00    38.90    14.42    10.12     8.73    14.41
4013    3   9   4   3   3   5
4013   39
4014    3   15.        3.31    14.30     5.30     3.72     3.21     0.0
4014    1   1   1   1   1   0
4014    7
*29              CIVILIAN MOTOR VEHICLE AREA SOURCES
  14
4001    3   15.       34.45
4001   40
4001   66
4002    3   15.      131.32
4002  115
4002  190
4003    3   15.     1941.46
4003  853
40031407
4004    3   15.      132.04
4004  153
4004  253
4005    3   15.      107.65
4005  123
4005  202
4006    3   15.     2674.44
```

```
40061012
40061670
4007    3    15.     136.83
4007   73
4007  175
4008    3    20.     114.31
4008  287
4008  287
4009    3     5.     802.22
40092014
40092014
4010    3    20.     324.21
4010  814
4010  814
4011    3    15.     357.47
4011  897
4011  897
4012    3    15.     307.59
4012  772
4012  772
4013    3    15.     172.49
4013  433
4013  433
4014    3    15.      79.25
4014    7
4014  312
*30                NUMBER OF AIRBASE LINE SOURCE GEOMETRIES
  40
4301        67694  401368  0.5   1524        67581  401286  0.5
4302        67696  401365  0.5    762        67595  401292  0.5
4303        67581  401286  0.5    762        67596  401274  0.5
4304        67595  401292  0.5    762        67596  401274  0.5
4305        67596  401274  0.5    762        67628  401274  0.5
4306        67581  401286  0.5   1524        67523  401244  0.5
4307        67523  401244  0.5    762        67529  401244  0.5
4308        67529  401244  0.5    762        67546  401244  0.5
4309        67546  401244  0.5    762        67656  401243  0.5
4310        67596  401274  0.5    762        67595  401243  0.5
4311        67488  401223  0.5    762        67368  401221  0.5
4312        67503  401233  0.5    762        67488  401223  0.5
4313        67503  401233  0.5    762        67505  401231  0.5
4314        67505  401231  0.5   2286        67487  401218  0.5
4315        67546  401244  0.5   1524        67545  401220  0.5
4316        67574  401243  0.5    762        67573  401220  0.5
4317        67595  401243  0.5    762        67594  401219  0.5
4318        67487  401218  0.5    762        67496  401206  0.5
4319        67529  401208  0.5    762        67496  401206  0.5
4320        67516  401220  0.5    762        67545  401220  0.5
4321        67545  401220  0.5    762        67573  401220  0.5
4322        67573  401220  0.5    762        67594  401219  0.5
4323        67656  401243  0.5    762        67594  401182  0.5
4324        67487  401218  0.5   2286        67411  401163  0.5
4325        67503  401184  0.5    762        67496  401206  0.5
4326        67545  401220  0.5    762        67545  401208  0.5
4327        67529  401208  0.5    762        67595  401208  0.5
4328        67573  401220  0.5    762        67573  401183  0.5
4329        67594  401219  0.5    762        67594  401182  0.5
4330        67503  401184  0.5    762        67502  401140  0.5
4331        67503  401160  0.5    762        67528  401166  0.5
4332        67528  401166  0.5    762        67545  401182  0.5
```

4333		67545	401182	0.5	762		67594	401182	0.5
4334		67545	401208	0.5	762		67545	401182	0.5
4335		67420	401169	0.5	1524		67422	401058	0.5
4336		67502	401140	0.5	762		67494	401105	0.5
4337		67594	401182	0.5	762		67489	401062	0.5
4338		67489	401062	0.5	762		67422	401058	0.5
4339		67422	401058	0.5	1524		67422	401054	0.5
4340		67523	401244	0.5	2286		67505	401231	0.5
*31			MILITARY MOTOR VEHICLE LINE SOURCES						
34									
4301	1	25.	35.04	75.42	27.91	19.60	17.02	22.96	
4302	1	25.	31.06	66.85	24.74	17.37	15.09	20.35	
4303	1	25.	4.78	10.28	3.81	2.67	2.32	3.13	
4304	1	25.	4.38	9.43	3.49	2.45	2.13	2.87	
4305	1	25.	8.36	18.00	6.66	4.68	4.06	5.48	
4306	1	25.	15.53	33.43	12.37	8.69	7.54	10.18	
4307	1	25.	1.59	3.43	1.27	0.89	0.77	1.04	
4308	1	25.	3.98	8.57	3.17	2.23	1.94	2.61	
4309	1	5.	27.47	59.14	21.89	15.37	13.35	18.01	
4310	1	25.	7.96	17.14	6.34	4.45	3.87	5.22	
4314	1	25.	5.57	12.00	4.44	3.12	2.71	3.65	
4315	1	25.	5.97	12.85	4.76	3.34	2.90	3.91	
4316	1	25.	5.97	12.85	4.76	3.34	2.90	3.91	
4317	1	25.	5.97	12.85	4.76	3.34	2.90	3.91	
4318	1	25.	3.58	7.72	2.86	2.00	1.74	2.35	
4319	1	25.	5.97	12.85	4.76	3.34	2.90	3.91	
4320	1	25.	7.56	16.28	6.03	4.23	3.68	4.96	
4321	1	25.	7.17	15.43	5.71	4.01	3.48	4.70	
4322	1	25.	5.18	11.14	4.12	2.89	2.51	3.39	
4323	1	15.	21.50	46.28	17.13	12.03	10.45	14.09	
4324	1	25.	23.49	50.57	18.71	13.14	11.41	15.40	
4326	1	25.	2.79	6.00	2.22	1.56	1.35	1.83	
4327	1	25.	16.32	35.14	13.00	9.13	7.93	10.70	
4328	1	25.	9.16	19.71	7.30	5.12	4.45	6.00	
4329	1	25.	9.16	19.71	7.30	5.12	4.45	6.00	
4331	1	25.	6.37	13.71	5.07	3.56	3.10	4.17	
4332	1	25.	5.97	12.85	4.76	3.34	2.90	3.91	
4333	1	25.	12.34	26.57	9.83	6.90	6.00	8.09	
4334	1	25.	6.37	13.71	5.07	3.56	3.10	4.17	
4335	1	25.	27.87	60.00	22.20	15.59	13.54	18.27	
4337	1	15.	39.82	85.71	31.72	22.27	19.35	26.10	
4338	1	15.	16.72	36.00	13.32	9.35	8.13	10.96	
4339	1	15.	0.80	1.71	0.63	0.45	0.39	0.52	
4340	1	25.	5.57	12.00	4.44	3.12	2.71	3.65	
*32			CIVILIAN MOTOR VEHICLE LINE SOURCES						
40									
4301	1	25.	906.						
4302	1	25.	414.						
4303	1	25.	91.						
4304	1	25.	61.						
4305	1	25.	140.						
4306	1	25.	355.						
4307	1	25.	145.						
4308	1	25.	329.						
4309	1	5.	1269.						
4310	1	25.	97.						
4311	1	15.	666.						
4312	1	15.	102.						

```
4313    1    15.      16.
4314    1    25.     457.
4315    1    25.     258.
4316    1    25.      75.
4317    1    25.     169.
4318    1    25.      87.
4319    1    25.      45.
4320    1    25.      55.
4321    1    25.      61.
4322    1    25.      86.
4323    1    15.     797.
4324    1    25.    2303.
4325    1    15.     159.
4326    1    25.     111.
4327    1    25.     231.
4328    1    25.     117.
4329    1    25.     185.
4330    1    15.     303.
4331    1    25.      57.
4332    1    25.      51.
4333    1    25.     233.
4334    1    25.     197.
4335    1    25.    1860.
4336    1    15.     257.
4337    1    15.    1537.
4338    1    15.     643.
4339    1    15.      83.
4340    1    25.     615.
*33             OTHER NON-AIRCRAFT LINE SOURCES
   0
*34             ENVIRON POINT SOURCES
   0
*35             ENVIRON AREA SOURCES
   0
*36             ENVIRON LINE SOURCES
   0
*37             ENVIRON NON-ROADWAY LINE SOURCES
   0
```

SAMPLE 1

SHORT-TERM INPUT

NELLIS AIR FORCE BASE

```
#1 TITLE INFORMATION
NELLIS AFB
BASE AUG AN
#2 GENERAL PROBLEM DESCRIPTION
4JUN76 RUN. ALL ON-BASE SOURCES. TYPICAL MORNING METEOROLOGY. 20 SPEC.RECEPT.
      0
      1      2      3      4      5
      1    30.    10.
  680.29 4015.29          1          1      1.0
    20
  679.58 4014.58
  678.87 4013.87
  678.16 4013.16
  677.46 4012.46
  676.75 4011.75
  676.04 4011.04
  675.34 4010.34
  474.63 4009.63
  673.92 4008.92
  673.21 4008.21
  672.51 4007.51
  6[illegible].09 4006.09
  6[illegible].68 4004.68
  6[illegible].26 4003.26
  666.85 4001.85
  665.44 4000.44
  664.02 3999.02
  661.19 3996.19
  658.37 3993.37
  655.54 3990.54
      0
    12     31      1  46.5
#3 PERIOD DEFINITION
      1      1
#4 METEOROLOGICAL INFORMATION
      8      6    1.6    45.    33.   266.
#5 TEMPORAL DISTRIBUTION INPUT INDICATOR
   -1
```

SAMPLE 1

LONG-TERM INPUT

NELLIS AIR FORCE BASE

```
*1
NELLIS AFB
1.0 KM GRID
*2
ANNUAL CONCENTRATIONS TO INDICATE IMPACT OF ALL AIRBASE SOURCES

     1     2     3     4     5
     1   30.    10
  666.0  4002.0       17       17      1.0
     0
     0
*3
     1
     1
    13
*4
  -1
```

SAMPLE 2

SOURCE INVENTORY INPUT

ALAMEDA NAVAL AIR STATION

```
*1              TITLE INFORMATION
ALAMEDA NAS
28 MAY 76
   1
INTERSECTION P/W                              37  47 18.70 122  19  5.014182.372 560.046
  48
2005              TRAINING FIRE- NEAR FUEL FARM
2120 14           TEST CELL 1
2121 14           TEST CELL 2
2122 14           TEST CELL 3
2123 14           TEST CELL 4
2124 14           TEST CELL 11
2125 14           TEST CELL 12
2126 372          TEST CELL 13
2127 372          TEST CELL 14
2128 397          TEST CELL 15
2129 397          TEST CELL 16
2130 398          TEST CELL 102
2131 398          TEST CELL 103
2132 398          TEST CELL 114
2133 398          TEST CELL 115
2134 398          TEST CELL 116
2206              RUN-UP STAND NEAR TEST CELL AREA
2326 THRU 2335    POWER PLANTS IN BLDG 10
2336 THRU 2338    POWER PLANTS END OF PIER 3
2403 342A         DIESEL STORAGE TANK
2404 374A         JP-4 STORAGE TANK
2405 374B         AVGAS STORAGE TANK
3011 459          BX SERVICE STATION
3012 547          BX SERVICE STATION
3013 438          TRUCK LOADING RACK
3014 37           TRUCK LOADING RACK
3015 282          BASE SERVICE STATION
3016 373          TRUCK LOADING RACK
3115 342A         HC BREATHING LOSS, OF STORAGE
3116 374A,B       HC BREATHING LOSS, POL STORAGE
3117 430-97F      HC BREATHING LOSS, POL STORAGE
3118 10           HC BREATHING LOSS, OF STORAGE
3215 837          TANK TRUCK PARKING
3216 AREA C       TANK TRUCK PARKING
3300 THRU 3311    A/B VEHICLE PARKING
3400 2,5,5A       HC AREA SOURCE  DRY CLEANING, PAINTING, DEGREASING
3401 167          HC AREA SOURCE, STRIPPING FACILITY
3402 360          HC AREA SOURCE, SOLVENT (MEK)
3403 410          HC AREA SOURCE
3400 THRU 3403    OTHER A/B AREA SOURCE
3500 THRU 3502    SPACE HEATING, OFF BASE HOUSING
3503              SPACE HEATING - ON BASE HOUSING
3504              SPACE HEATING - ALL NAS EXCEPT ON-BASE HOUSING
3505              SPACE HEATING - SUPPLY ANNEX
3600              OFF-ROAD VEHICLE SOURCE - P&C AREA
3601              OFF-ROAD VEHICLE SOURCE - SUPPLY AREA
3800 THRU 3802    A/B CIVILIAN VEHICLE AREA SOURCES
4100 THRU 4104    A/B NON-A/C LINE SOURCES
*2            NAMELIST(EGDATA,ACDATA,DSDATA)
 $EGDATA ACNAME(1)=4HA-3H,ACNAME(2)=4HA-4F,ACNAME(3)=4HA-7A,ACNAME(4)=4HC-9A,
 ACNAME(7)=5HSH-3A,ACNAME(9)=4HH-53,ACNAME(11)=5HRECIP,
 EGNAME(1)=6HJ52-P6,EGNAME(2)=6HJ52-P8,EGNAME(3)=8HJ52-P408,EGNAME(4)=7HJ65-W20,
 EGNAME(5)=6HJT8D-9,EGNAME(6)=7HTF30-P6,EGNAME(7)=8HTF30-408,
 EGNAME(8)=8HTF30P412,
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EGNAME(9)=8HTF346E-2,EGNAME(10)=7HTF41-A2,EGNAME(11)=6HT56-7A,
EGNAME(12)=6HT56-8A,EGNAME(13)=8HT56A10WA,EGNAME(14)=6HT56-14,
EGNAME(15)=6HT56-16,EGNAME(16)=8HT56A-422,EGNAME(17)=8HT58GE-88,
EGNAME(18)=4HT-62,EGNAME(19)=8HT64GE413,EGNAME(20)=4HGTPC,EGNAME(21)=7HJ57-P10,
EGNAME(22)=7HJ57-P16,EGNAME(24)=8HJ57-P420,
      EGNAME(23)=3HJ60,
EGNAME(25)=5HR1820,
EGEMFC(1,1,1)=95.6,EGEMFC(1,2,1)=11.9,EGEMFC(1,3,1)=2.7,EGEMFC(1,4,1)=0.0,
EGEMFC(2,1,1)=20.3,EGEMFC(2,2,1)=0.2,EGEMFC(2,3,1)=0.4,EGEMFC(2,4,1)=0.0,
EGEMFC(3,1,1)=2.0,EGEMFC(3,2,1)=6.4,EGEMFC(3,3,1)=9.5,EGEMFC(3,4,1)=0.0,
EGEMFC(4,1,1)=6.5,EGEMFC(4,2,1)=45.64,EGEMFC(4,3,1)=27.45,EGEMFC(4,4,1)=0.0,
EGEMFC(5,1,1)=1.0,EGEMFC(5,2,1)=1.0,EGEMFC(5,3,1)=1.0,EGEMFC(5,4,1)=1.0,
EGEMFC(1,1,2)=60.0,EGEMFC(1,2,2)=1.50,EGEMFC(1,3,2)=1.1,EGEMFC(1,4,2)=0.0,
EGEMFC(2,1,2)=49.4,EGEMFC(2,2,2)=0.5,EGEMFC(2,3,2)=0.4,EGEMFC(2,4,2)=0.0,
EGEMFC(3,1,2)=1.4,EGEMFC(3,2,2)=10.5,EGEMFC(3,3,2)=11.4,EGEMFC(3,4,2)=0.0,
EGEMFC(4,1,2)=6.5,EGEMFC(4,2,2)=45.64,EGEMFC(4,3,2)=27.45,EGEMFC(4,4,2)=0.0,
EGEMFC(5,1,2)=1.00,EGEMFC(5,2,2)=1.00,EGEMFC(5,3,2)=1.00,EGEMFC(5,4,2)=0.0,
EGEMFC(1,1,3)=58.6,EGEMFC(1,2,3)=1.6,EGEMFC(1,3,3)=1.2,EGEMFC(1,4,3)=0.0,
EGEMFC(2,1,3)=34.2,EGEMFC(2,2,3)=0.4,EGEMFC(2,3,3)=0.4,EGEMFC(2,4,3)=0.0,
EGEMFC(3,1,3)=1.5,EGEMFC(3,2,3)=9.8,EGEMFC(3,3,3)=11.2,EGEMFC(3,4,3)=0.0,
EGEMFC(4,1,3)=6.5,EGEMFC(4,2,3)=45.64,EGEMFC(4,3,3)=27.45,EGEMFC(4,4,3)=0.0,
EGEMFC(5,1,3)=1.00,EGEMFC(5,2,3)=1.00,EGEMFC(5,3,3)=1.00,EGEMFC(5,4,3)=0.0,
EGEMFC(1,1,4)=50.2,EGEMFC(1,2,4)=16.1,EGEMFC(1,3,4)= 7.7,EGEMFC(1,4,4)=0.0,
EGEMFC(2,1,4)=3.7,EGEMFC(2,2,4)=0.2,EGEMFC(2,3,4)=0.4,EGEMFC(2,4,4)=0.0,
EGEMFC(3,1,4)=2.7,EGEMFC(3,2,4)=7.2,EGEMFC(3,3,4)=7.5,EGEMFC(3,4,4)=0.0,
EGEMFC(4,1,4)=.08,EGEMFC(4,2,4)=6.07,EGEMFC(4,3,4)=4.05,EGEMFC(4,4,4)=0.0,
EGEMFC(5,1,4)=1.00,EGEMFC(5,2,4)=1.00,EGEMFC(5,3,4)=1.00,EGEMFC(5,4,4)=0.0,
EGEMFC(1,1,5)=74.5,EGEMFC(1,2,5)=2.2,EGEMFC(1,3,5)=1.4,EGEMFC(1,4,5)=0.0,
EGEMFC(2,1,5)=26.0,EGEMFC(2,2,5)=0.20,EGEMFC(2,3,5)=0.50,EGEMFC(2,4,5)=0.0,
EGEMFC(3,1,5)=2.39,EGEMFC(3,2,5)=18.0,EGEMFC(3,3,5)=22.2,EGEMFC(3,4,5)=0.0,
EGEMFC(4,1,5)=0.34,EGEMFC(4,2,5)=0.38,EGEMFC(4,3,5)=0.45,EGEMFC(4,4,5)=0.0,
EGEMFC(5,1,5)=1.00,EGEMFC(5,2,5)=1.00,EGEMFC(5,3,5)=1.00,EGEMFC(5,4,5)=0.0,
EGEMFC(1,1,6)=74.7,EGEMFC(1,2,6)=3.13,EGEMFC(1,3,6)=2.08,EGEMFC(1,4,6)=0.0,
EGEMFC(2,1,6)=18.0,EGEMFC(2,2,6)=0.17,EGEMFC(2,3,6)=0.22,EGEMFC(2,4,6)=0.0,
EGEMFC(3,1,6)=3.13,EGEMFC(3,2,6)=10.5,EGEMFC(3,3,6)=13.6,EGEMFC(3,4,6)=0.0,
EGEMFC(4,1,6)=51.72,EGEMFC(4,2,6)=18.5,EGEMFC(4,3,6)=24.7,EGEMFC(4,4,6)=0.0,
EGEMFC(5,1,6)=1.00,EGEMFC(5,2,6)=1.00,EGEMFC(5,3,6)=1.00,EGEMFC(5,4,6)=0.0,
EGEMFC(1,1,7)=76.5,EGEMFC(1,2,7)=1.4,EGEMFC(1,3,7)=1.0,EGEMFC(1,4,7)=0.0,
EGEMFC(2,1,7)=40.1,EGEMFC(2,2,7)=0.2,EGEMFC(2,3,7)=0.2,EGEMFC(1,4,7)=0.0,
EGEMFC(3,1,7)=4.5,EGEMFC(3,2,7)=16.7,EGEMFC(3,3,7)=21.3,EGEMFC(2,4,7)=0.0,
EGEMFC(4,1,7)=44.13,EGEMFC(4,2,7)=13.08,EGEMFC(4,3,7)=19.60,EGEMFC(4,4,7)=0.0,
EGEMFC(5,1,7)=1.00,EGEMFC(5,2,7)=1.00,EGEMFC(5,3,7)=1.00, EGEMFC(5,4,7)=0.0,
EGEMFC(1,1,8)=65.9,EGEMFC(1,2,8)=12.4,EGEMFC(1,3,8)=5.15,EGEMFC(1,4,8)=30.5,
EGEMFC(2,1,8)=34.0,EGEMFC(2,2,8)=0.95,EGEMFC(2,3,8)=0.2,EGEMFC(2,4,8)=1.2,
EGEMFC(3,1,8)=2.3,EGEMFC(3,2,8)=11.3,EGEMFC(3,3,8)=19.8,EGEMFC(3,4,8)=4.6,
EGEMFC(4,1,8)=44.13,EGEMFC(4,2,8)=13.08,EGEMFC(4,3,8)=19.6,EGEMFC(4,4,8)=2.2,
EGEMFC(5,1,8)=1.0,EGEMFC(5,2,8)=1.0,EGEMFC(5,3,8)=1.0,EGEMFC(5,4,8)=1.0,
EGEMFC(1,1,9)=121.6,EGEMFC(1,2,9)=3.4,EGEMFC(1,3,9)=1.14,EGEMFC(1,4,9)=0.0,
EGEMFC(2,1,9)=41.4,EGEMFC(2,2,9)=0.3,EGEMFC(2,3,9)=0.03,EGEMFC(2,4,9)=0.0,
EGEMFC(3,1,9)=26.4,EGEMFC(3,2,9)=26.85,EGEMFC(3,3,9)=11.3,EGEMFC(3,4,9)=0.0,
EGEMFC(4,1,9)=1.4,EGEMFC(4,2,9)=1.23,EGEMFC(4,3,9)=5.09,EGEMFC(4,4,9)=0.0,
EGEMFC(5,1,9)=1.00,EGEMFC(5,2,9)=1.0,EGEMFC(5,3,9)=1.0,EGEMFC(5,4,9)=0.0,
EGEMFC(1,1,10)=107.1,EGEMFC(1,2,10)=3.5,EGEMFC(1,3,10)=1.6,EGEMFC(1,4,10)=0.0,
EGEMFC(2,1,10)=66.2,EGEMFC(2,2,10)=1.3,EGEMFC(2,3,10)=0.6,EGEMFC(2,4,10)=0.0,
EGEMFC(3,1,10)=1.3,EGEMFC(3,2,10)=14.7,EGEMFC(3,3,10)=22.3,EGEMFC(3,4,10)=0.0,
EGEMFC(4,1,10)=44.13,EGEMFC(4,2,10)=13.08,EGEMFC(4,3,10)=19.60,
EGEMFC(4,4,10)=0.0,
EGEMFC(5,1,10)=1.00,EGEMFC(5,2,10)=1.00,EGEMFC(5,3,10)=1.00,EGEMFC(5,4,10)=0.0,
EGEMFC(1,1,11)=33.5,EGEMFC(1,2,11)=2.6,EGEMFC(1,3,11)=2.4,EGEMFC(1,4,11)=0.0,
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EGEMFC(2,1,11)=18.0,EGEMFC(2,2,11)=0.1,EGEMFC(2,3,11)=0.1,EGEMFC(2,4,11)=0.0,
EGEMFC(3,1,11)=2.7,EGEMFC(3,2,11)=11.7,EGEMFC(3,3,11)=12.2,EGEMFC(3,4,11)=0.0,
EGEMFC(4,1,11)=11.93,EGEMFC(4,2,11)=8.89,EGEMFC(4,3,11)=6.35,
EGEMFC(4,4,11)=0.0,
EGEMFC(5,1,11)=1.0,EGEMFC(5,2,11)=1.0,EGEMFC(5,3,11)=1.00,EGEMFC(1,4,12)=0.0,
EGEMFC(1,1,12)=33.5,EGEMFC(1,2,12)=2.6,EGEMFC(1,3,12)=2.4,EGEMFC(2,4,12)=0.0,
EGEMFC(2,1,12)=18.0,EGEMFC(2,2,12)=0.1,EGEMFC(2,3,12)=0.1,EGEMFC(3,4,12)=0.0,
EGEMFC(3,1,12)=2.70,EGEMFC(2,2,12)=11.7,EGEMFC(3,3,12)=12.2,EGEMFC(4,4,12)=0.0,
EGEMFC(4,1,12)=11.93,EGEMFC(2,2,12)=8.89,EGEMFC(4,3,12)=6.35,
EGEMFC(5,1,12)=1.00,EGEMFC(5,2,12)=1.0,EGEMFC(5,3,12)=1.00,EGEMFC(5,4,12)=0.0,
EGEMFC(1,1,13)=6.0,EGEMFC(1,2,13)=2.2,EGEMFC(1,3,13)=0.1,EGEMFC(1,4,13)=0.0,
EGEMFC(2,1,13)=0.8,EGEMFC(2,2,13)=0.1,EGEMFC(2,3,13)=0.03,EGEMFC(2,4,13)=0.0,
EGEMFC(3,1,13)=.60,EGEMFC(3,2,13)=.20,EGEMFC(3,3,13)=0.1,EGEMFC(3,4,13)=0.0,
EGEMFC(4,1,13)=11.7,EGEMFC(4,2,13)=15.5,EGEMFC(5,3,13)=6.3,EGEMFC(4,4,13)=0.0,
EGEMFC(5,1,13)=1.00,EGEMFC(5,2,13)=1.0,EGEMFC(5,3,13)=1.00,EGEMFC(5,4,13)=0.0,
EGEMFC(1,1,14)=6.0,EGEMFC(1,2,14)=2.2,EGEMFC(1,3,14)=0.1,EGEMFC(1,4,14)=0.0,
EGEMFC(2,1,14)=0.8,EGEMFC(2,2,14)=0.1,EGEMFC(2,3,14)=0.03,EGEMFC(2,4,14)=0.0,
EGEMFC(3,1,14)=.60,EGEMFC(3,2,14)=.20,EGEMFC(3,3,14)=0.1,EGEMFC(3,4,14)=0.0,
EGEMFC(4,1,14)=11.7,EGEMFC(4,2,14)=15.5,EGEMFC(4,3,14)=6.3,EGEMFC(4,4,14)=0.0,
EGEMFC(5,1,14)=1.00,EGEMFC(5,2,14)=1.0,EGEMFC(5,3,14)=1.00,EGEMFC(5,4,14)=1.0,
EGEMFC(1,1,15)=6.0,EGEMFC(1,2,15)=2.2,EGEMFC(1,3,15)=0.1,EGEMFC(1,4,15)=0.0,
EGEMFC(2,1,15)=0.8,EGEMFC(2,2,15)=0.1,EGEMFC(2,3,15)=0.03,EGEMFC(2,4,15)=0.0,
EGEMFC(3,1,15)=.60,EGEMFC(3,2,15)=.20,EGEMFC(3,3,15)=0.1,EGEMFC(3,4,15)=0.0,
EGEMFC(4,1,15)=11.7,EGEMFC(4,2,15)=15.5,EGEMFC(4,3,15)=6.3,EGEMFC(4,4,15)=0.0,
EGEMFC(5,1,15)=1.00,EGEMFC(5,2,15)=1.0,EGEMFC(5,3,15)=1.00,EGEMFC(5,4,15)=1.0,
EGEMFC(1,1,16)=6.0,EGEMFC(1,2,16)=2.2,EGEMFC(1,3,16)=0.1,EGEMFC(1,4,16)=0.0,
EGEMFC(2,1,16)=0.8,EGEMFC(2,2,16)=0.1,EGEMFC(2,3,16)=0.03,EGEMFC(2,4,16)=0.0,
EGEMFC(3,1,16)=.60,EGEMFC(3,2,16)=.20,EGEMFC(3,3,16)=0.1,EGEMFC(3,4,16)=0.0,
EGEMFC(4,1,16)=11.7,EGEMFC(4,2,16)=15.5,EGEMFC(4,3,16)=6.3,EGEMFC(4,4,16)=0.0,
EGEMFC(5,1,16)=1.00,EGEMFC(5,2,16)=1.0,EGEMFC(5,3,16)=1.00,EGEMFC(5,4,16)=1.0,
EGEMFC(1,1,17)=172.2,EGEMFC(1,2,17)=9.4,EGEMFC(1,3,17)=8.5,EGEMFC(1,4,17)=0.0,
EGEMFC(2,1,17)=95.7,EGEMFC(2,2,17)=0.60,EGEMFC(2,3,17)=0.6,EGEMFC(2,4,17)=0.0,
EGEMFC(3,1,17)=2.0,EGEMFC(3,2,17)=5.1,EGEMFC(3,3,17)=5.4,EGEMFC(3,4,17)=0.0,
EGEMFC(4,1,17)=0.2,EGEMFC(4,2,17)=1.1,EGEMFC(4,3,17)=1.6,EGEMFC(4,4,17)=0.0,
EGEMFC(5,1,17)=1.00,EGEMFC(5,2,17)=1.00,EGEMFC(5,3,17)=1.0,EGEMFC(5,4,17)=1.0,
EGEMFC(1,1,18)=17.8,EGEMFC(1,2,18)=6.7,EGEMFC(1,3,18)=6.67,EGEMFC(1,4,18)=0.0,
EGEMFC(2,1,18)=2.2,EGEMFC(2,2,18)=.33,EGEMFC(2,3,18)=0.33,EGEMFC(2,4,18)=0.0,
EGEMFC(3,1,18)=2.2,EGEMFC(3,2,18)=4.4,EGEMFC(3,3,18)=4.4,EGEMFC(3,4,18)=0.0,
EGEMFC(4,1,18)=0.2,EGEMFC(4,2,18)=0.3,EGEMFC(4,3,18)=0.3,EGEMFC(4,4,18)=0.0,
EGEMFC(5,1,18)=1.00,EGEMFC(5,2,18)=1.0,EGEMFC(5,3,18)=1.00,EGEMFC(5,4,18)=1.0,
EGEMFC(1,1,19)=46.8,EGEMFC(1,2,19)=1.6,EGEMFC(1,3,19)=0.99,EGEMFC(1,4,19)=0.0,
EGEMFC(2,1,19)=12.7,EGEMFC(2,2,19)=0.45,EGEMFC(2,3,19)=0.48,EGEMFC(2,4,19)=0.0,
EGEMFC(3,1,19)=3.0,EGEMFC(3,2,19)=11.25,EGEMFC(3,3,19)=12.8,EGEMFC(3,4,19)=0.0,
EGEMFC(4,1,19)=0.5,EGEMFC(4,2,19)=1.9,EGEMFC(4,3,19)=1.7,EGEMFC(4,4,19)=0.0,
EGEMFC(5,1,19)=1.00,EGEMFC(5,2,19)=1.0,EGEMFC(5,3,19)=1.0,EGEMFC(5,4,19)=1.0,
EGEMFC(1,1,20)=17.8,EGEMFC(1,2,20)=6.5,EGEMFC(1,3,20)=6.5,EGEMFC(1,4,20)=0.0,
EGEMFC(2,1,20)=1.67,EGEMFC(2,2,20)=0.3,EGEMFC(2,3,20)=0.3,EGEMFC(2,4,20)=0.0,
EGEMFC(3,1,20)=2.78,EGEMFC(3,2,20)=4.4,EGEMFC(3,3,20)=4.4,EGEMFC(3,4,20)=0.0,
EGEMFC(4,1,20)=0.17,EGEMFC(4,2,20)=0.3,EGEMFC(4,3,20)=0.3,EGEMFC(4,4,20)=0.0,
EGEMFC(5,1,20)=1.00,EGEMFC(5,2,20)=1.0,EGEMFC(5,3,20)=1.00,EGEMFC(5,4,20)=1.0,
EGEMFC(1,1,21)=65.5,EGEMFC(1,2,21)=0.13,EGEMFC(1,3,21)=0.11,EGEMFC(1,4,21)=0.0,
EGEMFC(2,1,21)=57.4,EGEMFC(2,2,21)=0.03,EGEMFC(2,3,21)=0.02,EGEMFC(2,4,21)=0.0,
EGEMFC(3,1,21)=0.13,EGEMFC(3,2,21)=1.22,EGEMFC(3,3,21)=1.31,EGEMFC(3,4,21)=0.0,
EGEMFC(4,1,21)=8.54,EGEMFC(4,2,21)=5.92,EGEMFC(4,3,21)=12.7,EGEMFC(4,4,21)=0.0,
EGEMFC(5,1,21)=1.00,EGEMFC(5,2,21)=1.00,EGEMFC(5,3,21)=1.0,EGEMFC(5,4,21)=1.0,
EGEMFC(1,1,22)=58.5,EGEMFC(1,2,22)=3.5,EGEMFC(1,3,22)=2.0,EGEMFC(1,4,22)=31.7,
EGEMFC(2,1,22)=53.4,EGEMFC(2,2,22)=0.3,EGEMFC(2,3,22)=0.70,EGEMFC(2,4,22)=0.67,
EGEMFC(3,1,22)=2.57,EGEMFC(3,2,22)=9.27,EGEMFC(3,3,22)=11.8,EGEMFC(3,4,22)=4.4,
EGEMFC(4,1,22)=8.54,EGEMFC(4,2,22)=5.92,EGEMFC(4,3,22)=12.8,EGEMFC(4,4,22)=4.9,
EGEMFC(5,1,22)=1.0,EGEMFC(5,2,22)=1.0,EGEMFC(5,3,22)=1.0,EGEMFC(5,4,22)=1.0,
                        EGEMFC(1,1,23)=70.91,EGEMFC(1,2,23)=5.72,
EGEMFC(1,3,23)=3.88,EGEMFC(2,1,23)=9.85,EGEMFC(2,2,23)=.13,
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EGEMFC(2,3,23)=.09,EGEMFC(3,1,23)=4.71,EGEMFC(3,2,23)=4.06,
EGEMFC(3,3,23)=4.71,EGEMFC(5,1,23)=1.0,EGEMFC(5,2,23)=1.0,EGEMFC(5,3,23)=1.0,
EGEMFC(4,1,23)=.0176,EGEMFC(4,2,23)=.0685,EGEMFC(4,3,23)=.0621,
EGEMFC(4,4,23)=.0176,EGEMFC(5,4,23)=1.0,
EGFF(1,23)=.459,EGFF(2,23)=2.014,EGFF(3,23)=2.456,IACABF(33)=0,
EGFF(4,23)=2.456,EGEMFC(1,4,23)=3.88,EGEMFC(2,4,23)=.09,EGEMFC(3,4,23)=4.71,
IDACEG(33)=23,IEGABF(23)=0,
EGEMFC(1,1,24)=64.8,EGEMFC(1,2,24)=8.8,EGEMFC(1,3,24)=5.5,EGEMFC(1,4,24)=11.6,
EGEMFC(2,1,24)=47.8,EGEMFC(2,2,24)=0.5,EGEMFC(2,3,24)=1.1,EGEMFC(2,4,24)=0.67,
EGEMFC(3,1,24)=1.5,EGEMFC(3,2,24)=11.6,EGEMFC(3,3,24)=15.5,EGEMFC(3,4,24)=6.1,
EGEMFC(4,1,24)=8.54,EGEMFC(4,2,24)=5.92,EGEMFC(4,3,24)=12.8,EGEMFC(4,4,24)=4.9,
EGEMFC(5,1,24)=1.0,EGEMFC(5,2,24)=1.0,EGEMFC(5,3,24)=1.0,EGEMFC(5,4,24)=1.0,
EGEMFC(1,1,25)=471.3,EGEMFC(1,2,25)=433.5,EGEMFC(1,3,25)=529.9,
EGEMFC(1,4,25)=0.0,
EGEMFC(2,1,25)=150.3,EGEMFC(2,2,25)=48.4,EGEMFC(2,3,25)=94.6,EGEMFC(2,4,25)=0.,
EGEMFC(3,1,25)=0.7,EGEMFC(3,2,25)=2.1,EGEMFC(3,3,25)=1.7,EGEMFC(3,4,25)=0.0,
EGEMFC(4,1,25)=0.1,EGEMFC(4,2,25)=.02,EGEMFC(4,3,25)=0.43,EGEMFC(4,4,25)=0.0,
EGEMFC(5,1,25)=0.6,EGEMFC(5,2,25)=0.6,EGEMFC(5,3,25)=0.6,EGEMFC(5,4,25)=0.0,
EGFF(1,1)=.8300,EGFF(2,1)=5.1200,EGFF(3,1)=6.4900,EGFF(4,1)=0.0,
EGFF(1,2)=.7390,EGFF(2,2)=5.2850,EGFF(3,2)=6.8400,EGFF(4,2)=0.0,
EGFF(1,3)=.8200,EGFF(2,3)=8.2600,EGFF(3,3)=9.2400,EGFF(4,3)=0.0,
EGFF(1,4)=1.3330,EGFF(2,4)=3.9510,EGFF(3,4)=6.4210,EGFF(4,4)=0.0,
EGFF(1,5)=1.1600,EGFF(2,5)=6.7850,EGFF(3,5)=8.2850,EGFF(4,5)=0.0,
EGFF(1,6)=.7500,EGFF(2,6)=7.4600,EGFF(3,6)=8.6090,EGFF(4,6)=0.0,
EGFF(1,7)=.7500,EGFF(2,7)=1.8850,EGFF(3,7)=8.6090,EGFF(4,7)=0.0,
EGFF(1,8)=.9990,EGFF(2,8)=3.5970,EGFF(3,8)=7.3940,EGFF(4,8)=14.4,
EGFF(1,9)=.3480,EGFF(2,9)=1.2960,EGFF(3,9)=3.5000,EGFF(4,9)=0.0,
EGFF(1,10)=1.0700,EGFF(2,10)=8.02000,EGFF(3,10)=9.04000,EGFF(4,10)=0.0,
EGFF(1,11)=.7460,EGFF(2,11)=1.9000,EGFF(3,11)=2.0150,EGFF(4,11)=0.0,
EGFF(1,12)=.7460,EGFF(2,12)=1.9000,EGFF(3,12)=2.0150,EGFF(4,12)=0.0,
EGFF(1,13)=.7580,EGFF(2,13)=1.0750,EGFF(3,13)=2.0420,EGFF(4,13)=0.0,
EGFF(1,14)=.7580,EGFF(2,14)=1.0750,EGFF(3,14)=1.0750,EGFF(4,14)=0.0,
EGFF(1,15)=.7580,EGFF(2,15)=1.0750,EGFF(3,15)=1.0750,EGFF(4,15)=0.0,
EGFF(1,16)=.7460,EGFF(2,16)=1.9000,EGFF(3,16)=2.0150,EGFF(4,16)=0.0,
EGFF(1,17)=.1130,EGFF(2,17)=.7090,EGFF(3,17)=.7440,EGFF(4,17)=0.0,
EGFF(1,18)=.045,EGFF(2,18)=.090,EGFF(3,18)=.090,EGFF(4,18)=0.0,
EGFF(1,19)=.2680,EGFF(2,19)=1.4990,EGFF(3,19)=1.6560,EGFF(4,19)=0.0,
EGFF(1,20)=.1800,EGFF(2,20)=.3400,EGFF(3,20)=.3400,EGFF(4,20)=0.0,
EGFF(1,21)=1.1360,EGFF(2,21)=7.7050,EGFF(3,21)=8.1010,EGFF(4,21)=0.0,
EGFF(1,22)=1.1700,EGFF(2,22)=7.1070,EGFF(3,22)=8.5670,EGFF(4,22)=36.3610,
EGFF(1,24)=1.2870,EGFF(2,24)=7.7820,EGFF(3,24)=10.8640,EGFF(4,24)=37.8410,
EGFF(1,25)=.089,EGFF(2,25)=.8620,EGFF(3,25)=.5299,
IACABF(1)=0,IACABF(2)=0,IACABF(3)=0,IACABF(4)=0,IACABF(7)=0,IACABF(6)=0,
IACABF(9)=0,IACABF(11)=0,
IDACEG(1)=21,IDACEG(2)=4,IDACEG(3)=10,IDACEG(4)=5,IDACEG(7)=17,IDACEG(9)=19,
IDACEG(11)=25,
IEGABF(1)=0,IEGABF(2)=0,IEGABF(3)=0,IEGABF(4)=0,IEGABF(5)=0,IEGABF(6)=0,
IEGABF(7)=0,IEGABF(8)=1,IEGABF(9)=0,IEGABF(10)=0,IEGABF(11)=0,IEGABF(12)=0,
IEGABF(13)=0,IEGABF(14)=0,IEGABF(15)=0,IEGABF(16)=0,IEGABF(17)=0,IEGABF(18)=0,
IEGABF(19)=0,  IEGABF(20)=0,  IEGABF(21)=0,  IEGABF(22)=1,
IEGABF(24)=1,  IEGABF(25)=0,
IDRR(1)=4,IDRR(2)=30,IDRR(3)=16,IDRR(4)=20,IDRR(7)=37,IDRR(9)=37,IDRR(11)=25,
$
$ACDATA
APPHT=.9144,CLMHHT=.9144,ENGNO(1,1)=2,ENGNO(2,1)=1,ENGNO(3,1)=1,ENGNO(4,1)=2,
ENGNO(1,2)=1,ENGNO(2,2)=1,ENGNO(3,2)=1,ENGNO(4,2)=1,ENGNO(7,2)=1,ENGNO(9,2)=1,
ENGNO(7,1)=2,ENGNO(9,1)=2,  ENGNO(11,1)=2,  ENGNO(11,2)=1,
DSCNT1(1)=3.0,DSCNT1(2)=3. ,DSCNT1(3)=3.5,DSCNT1(4)=3.0,DSCNT1(7)=1.0,
DSCNT2(1)=3.0,DSCNT2(2)=3.0,DSCNT2(3)=2.5,DSCNT2(4)=3.0,DSCNT2(7)=60.0,
DSCNT1(9)=1.0, DSCNT1(11)=4.0,
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DSCNT2(9)=60.0,DSCNT2(11)=3.0,
APSPD1(1)=370.4,APSPD1(2)=370.4,APSPD1(3)=370.4,APSPD1(4)=370.4,
APSPD1(7)=129.6,APSPD1(9)=129.6,APSPD1(11)=194.5,
APSPD2(1)=277.8,APSPD2(2)=277.8,APSPD2(3)=277.8,APSPD2(4)=277.8,
APSPD2(7)=55.6,APSPD2(9)=55.6,APSPD2(11)=165.2,
APPHT2(1)=.3048,APPHT2(2)=.3048,APPHT2(3)=.3658,APPHT2(4)=.4572,APPHT2(7)=.121,
APPHT2(9)=.121,APPHT2(11)=.4572,
ASCNT1(1)=4.0,ASCNT1(2)=2.5,ASCNT1(3)=8.0,ASCNT1(4)=10.0,ASCNT1(7)=5.0,
ASCNT1(9)=5.0,ASCNT1(11)=6.0,
ASCNT2(1)=2.5,ASCNT2(2)=4.0,ASCNT2(3)=10.0,ASCNT2(4)=8.0, ASCNT2(7)=15.0,
ASCNT2(9)=15.0,
COSPD1(1)=277.8,COSPD1(2)=277.8,COSPD1(3)=277.8,COSPD1(4)=277.8,
COSPD1(7)=74.8,COSPD1(9)=74.8,COSPD1(11)=240.8,
COSPD2(1)=463.0,COSPD2(2)=463.0,COSPD2(3)=463.0,COSPD2(4)=370.4,
COSPD2(7)=166.7,COSPD2(9)=166.7,COSPD2(11)=370.4,
COHT1(1)=.4572,COHT1(2)=.4572,COHT1(3)=.457,COHT1(4)=.4572,COHT1(7)=0.121,
COHT1(9)=0.121,COHT1(11)=0.10,
TXISPD(1)=48.3,TXISPD(2)=48.3,TXISPD(3)=56.3,TXISPD(4)=24.1,TXISPD(7)=8.1,
TXISPD(9)=8.1,TXISPD(11)=16.1,
LNDSPD(1)=211.6,LNDSPD(2)=222.2,LNDSPD(3)=222.2,LNDSPD(4)=222.2,
LNDSPD(7)=8.0,LNDSPD(9)=8.0,LNDSPD(11)=185.2,
TOSPD(1)=277.8,TOSPD(2)=277.8,TOSPD(3)=259.3,TOSPD(4)=277.8,TOSPD(7)=16.9,
TOSPD(9)=16.9,TOSPD(11)=185.2,
SRTUPT(1)=10.0,SRTUPT(2)=5.0,SRTUPT(3)=5.0,SRTUPT(4)=10.0,SRTUPT(7)=10.0,
SRTUPT(9)=5.0,SRTUPT(11)=7.0,
EGCHKT(1)=0.0,EGCHKT(2)=0.0,EGCHKT(3)=0.0,EGCHKT(4)=0.0,EGCHKT(7)=0.0,
EGCHKT(9)=0.0,EGCHKT(11)=3.0,
SHTDNT(1)=5.0,SHTDNT(2)=5.0,SHTDNT(3)=5.0,SHTDNT(4)=5.0,SHTDNT(7)=5.0,
SHTDNT(9)=5.0,SHTDNT(11)=7.0,
TOWT(1)=55.,TOWT(2)=14.4,TOWT(3)=42.,TOWT(4)=98.,
TOWT(7)=5.,TOWT(9)=5.,TOWT(11)=26.,
$
$OSDATA
VHMLDY(1)=.18,    VHMLDY(2)=.05,
CVABDY(1)=.18,    CVABDY(2)=.05,
CVABHR(1)=.018,   CVABHR(2)=.008,    CVABHR(3)=.005,    CVABHR(4)=.003,
CVABHR(5)=.004,   CVABHR(6)=.008,    CVABHR(7)=.097,    CVABHR(8)=.099,
CVABHR(9)=.045,   CVABHR(10)=.049,   CVABHR(11)=.047,   CVABHR(12)=.072,
CVABHR(13)=.069,  CVABHR(14)=.050,   CVABHR(15)=.049,   CVABHR(16)=.134,
CVABHR(17)=.096,  CVABHR(18)=.036,   CVABHR(19)=.029,   CVABHR(20)=.021,
CVABHR(21)=.016,  CVABHR(22)=.016,   CVABHR(23)=.014,   CVABHR(24)=.015,
ACDY(1,1)=0.,ACDY(2,1)=.5,  ACDY(1,2)=.2,  ACDY(2,2)=0.,
ACDY(1,3)=.2,ACDY(2,3)=0.,  ACDY(1,4)=.2,  ACDY(2,4)=0.,
ACDY(1,7)=.2,ACDY(2,7)=0.,  ACDY(1,9)=0.,  ACDY(2,9)=.5,
ACDY(1,11)=.2,  ACDY(2,11)=0.,  ACDY(1,33)=.2,  ACDY(2,33)=0.,
ACHR(1,1)=.0,     ACHR(2,1)=.0,     ACHR(3,1)=.0,     ACHR(4,1)=.0,
ACHR(5,1)=.0,     ACHR(6,1)=.0,     ACHR(7,1)=.075,   ACHR(8,1)=.075,
ACHR(9,1)=.075,   ACHR(10,1)=.075,  ACHR(11,1)=.075,  ACHR(12,1)=.075,
ACHR(13,1)=.075,  ACHR(14,1)=.075,  ACHR(15,1)=.075,  ACHR(16,1)=.075,
ACHR(17,1)=.075,  ACHR(18,1)=.075,  ACHR(19,1)=.075,  ACHR(20,1)=.0333,
ACHR(21,1)=.0333, ACHR(22,1)=.0333, ACHR(23,1)=.0,    ACHR(24,1)=.0,
ACHR(1,2)=.0,     ACHR(2,2)=.0,     ACHR(3,2)=.0,     ACHR(4,2)=.0,
ACHR(5,2)=.0,     ACHR(6,2)=.0,     ACHR(7,2)=.06,    ACHR(8,2)=.06,
ACHR(9,2)=.06,    ACHR(10,2)=.06,   ACHR(11,2)=.06,   ACHR(12,2)=.06,
ACHR(13,2)=.10,   ACHR(14,2)=.10,   ACHR(15,2)=.10,   ACHR( 16,2)=.10,
ACHR(17,2)=.10,   ACHR(18,2)=.04,   ACHR(19,2)=.04,   ACHR(20,2)=.015,
ACHR(21,2)=.015,  ACHR(22,2)=.015,  ACHR(23,2)=.015,  ACHR(24,2)=.0,
ACHR(1,3)=.0,     ACHR(2,3)=.0,     ACHR(3,3)=.0,     ACHR(4,3)=.0,
ACHR(5,3)=.0,     ACHR(6,3)=.0,     ACHR(7,3)=.06,    ACHR(8,3)=.06,
ACHR(9,3)=.06,    ACHR(10,3)=.06,   ACHR(11,3)=.06,   ACHR(12,3)=.06,
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ACHR(13,3)=.10,   ACHR(14,3)=.10,   ACHR(15,3)=.10,   ACHR(16,3)=.10,
ACHR(17,3)=.10,   ACHR(18,3)=.04,   ACHR(19,3)=.04,   ACHR(20,3)=.015,
ACHR(21,3)=.015,  ACHR(22,3)=.015,  ACHR(23,3)=.015,  ACHR(24,3)=.0,
ACHR(1,4)=.0,     ACHR(2,4)=.0,     ACHR(3,4)=.0,     ACHR(4,4)=.0,
ACHR(5,4)=.05,    ACHR(6,4)=.05,    ACHR(7,4)=.05,    ACHR(8,4)=.05,
ACHR(9,4)=.05,    ACHR(10,4)=.05,   ACHR(11,4)=.05,   ACHR(12,4)=.05,
ACHR(13,4)=.05,   ACHR(14,4)=.05,   ACHR(15,4)=.05,   ACHR(16,4)=.05,
ACHR(17,4)=.05,   ACHR(18,4)=.05,   ACHR(19,4)=.05,   ACHR(20,4)=.05,
ACHR(21,4)=.05,   ACHR(22,4)=.05,   ACHR(23,4)=.05,   ACHR(24,4)=.05,
ACHR(1,9)=.0,     ACHR(2,9)=.0,     ACHR(3,9)=.0,     ACHR(4,9)=.0,
ACHR(5,9)=.0,     ACHR(6,9)=.0,     ACHR(7,9)=.075,   ACHR(8,9)=.075,
ACHR(9,9)=.075,   ACHR(10,9)=.075,  ACHR(11,9)=.075,  ACHR(12,9)=.075,
ACHR(13,9)=.075,  ACHR(14,9)=.075,  ACHR(15,9)=.075,  ACHR(16,9)=.075,
ACHR(17,9)=.075,  ACHR(18,9)=.075,  ACHR(19,9)=.025,  ACHR(20,9)=.025,
ACHR(21,9)=.025,  ACHR(22,9)=.025,  ACHR(23,9)=.0,    ACHR(24,9)=.0,
ACHR(1,7)=.0,     ACHR(2,7)=.0,     ACHR(3,7)=.0,     ACHR(4,7)=.0,
ACHR(5,7)=.05,    ACHR(6,7)=.05,    ACHR(7,7)=.05,    ACHR(8,7)=.05,
ACHR(9,7)=.05,    ACHR(10,7)=.05,   ACHR(11,7)=.05,   ACHR(12,7)=.05,
ACHR(13,7)=.05,   ACHR(14,7)=.05,   ACHR(15,7)=.05,   ACHR(16,7)=.05,
ACHR(17,7)=.05,   ACHR(18,7)=.05,   ACHR(19,7)=.05,   ACHR(20,7)=.05,
ACHR(21,7)=.05,   ACHR(22,7)=.05,   ACHR(23,7)=.05,   ACHR(24,7)=.05,
ACHR(1,11)=.0,    ACHR(2,11)=.0,    ACHR(3,11)=.0,    ACHR(4,11)=.0,
ACHR(5,11)=.05,   ACHR(6,11)=.05,   ACHR(7,11)=.05,   ACHR(8,11)=.05,
ACHR(9,11)=.05,   ACHR(10,11)=.05,  ACHR(11,11)=.05,  ACHR(12,11)=.05,
ACHR(13,11)=.05,  ACHR(14,11)=.05,  ACHR(15,11)=.05,  ACHR(16,11)=.05,
ACHR(17,11)=.05,  ACHR(18,11)=.05,  ACHR(19,11)=.05,  ACHR(20,11)=.05,
ACHR(21,11)=.05,  ACHR(22,11)=.05,  ACHR(23,11)=.05,  ACHR(24,11)=.05,
ACHR(1,33)=.0,    ACHR(2,33)=.0,    ACHR(3,33)=.0,    ACHR(4,33)=.0,
ACHR(5,33)=.05,   ACHR(6,33)=.05,   ACHR(7,33)=.05,   ACHR(8,33)=.05,
ACHR(9,33)=.05,   ACHR(10,33)=.05,  ACHR(11,33)=.05,  ACHR(12,33)=.05,
ACHR(13,33)=.05,  ACHR(14,33)=.05,  ACHR(15,33)=.05,  ACHR(16,33)=.05,
ACHR(17,33)=.05,  ACHR(18,33)=.05,  ACHR(19,33)=.05,  ACHR(20,33)=.05,
ACHR(21,33)=.05,  ACHR(22,33)=.05,  ACHR(23,33)=.05,  ACHR(24,33)=.05,
CVENDY(1)=.15,    CVENDY(2)=.125,
CVENHR(1)=.018,   CVENHR(2)=.008,   CVENHR(3)=.005,   CVENHR(4)=.003,
CVENHR(5)=.004,   CVENHR(6)=.008,   CVENHR(7)=.097,   CVENHR(8)=.099,
CVENHR(9)=.045,   CVENHR(10)=.049,  CVENHR(11)=.047,  CVENHR(12)=.072,
CVENHR(13)=.069,  CVENHR(14)=.050,  CVENHR(15)=.049,  CVENHR(16)=.134,
CVENHR(17)=.096,  CVENHR(18)=.036,  CVENHR(19)=.029,  CVENHR(20)=.021,
CVENHR(21)=.016,  CVENHR(22)=.016,  CVENHR(23)=.014,  CVENHR(24)=.015,
FLDY(1,1)=.18,    FLDY(2,1)=.05,
FLDY(1,2)=.16,    FLDY(2,2)=.10,
FLDY(1,3)=.16,    FLDY(2,3)=.10,
FLDY(1,4)=.18,    FLDY(2,4)=.05,
$
*3              METEOROLOGICAL DATA
    59.0    2909.      4.0      8.0    14.0
*4              AIRCRAFT AND RUNWAY TOTALS
   8    4    6    0   25
*5              AIRCRAFT ACTIVITY
         1    1375     1375     2961
         2    1237     1237      206
         3    2124     2124     2504
         4    1266     1266        0
         7     723      723       45
         9     345      345       37
        11    1262     1262     2036
        33     378      378        0
*6              AIRCRAFT PARKING AREAS
  01    2  560.71 4182.41      072  560.71 4182.35    .072
  02    1  560.70 4182.24      072
```

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  03   2  560.70 4182.13      084  560.604182.135   .084
  04   1  561.45 4181.59      060
  05   1  561.62 4181.59      060
  06   2  561.70 4181.67      060  561.69 4181.71   .060
*7              AIRCRAFT TAXIWAY PATH SEGMENTS
  01       560750 4181600     20                    561450 4181590     2
  02       560750 4181600     20                    560750 4181470     2
  03       560750 4181600     20                    560780 4182070     2
  04       560780 4182130     20                    560780 4182240     2
  05       560800 4182540     20                    561200 4182550     2
  06       561200 4182550     20                    561210 4182640     2
  07       561210 4182640     20                    559940 4182600     2
  08       560790 4182370     20                    560800 4182540     2
  09       559940 4182600     20                    559630 4183090     2
  10       559630 4183090     20                    559100 4183250     2
  11       560790 4182370     20                    560710 4182410     2
  12       559500 4182590     20                    560350 4181260     2
  13       560220 4182100     20                    560780 4182070     2
  14       560790 4182370     20                    560710 4182350     2
  15       560750 4181470     20                    560350 4181260     2
  16       561730 4181590     20                    561700 4181670     2
  17       561730 4181590     20                    561690 4181710     2
  18       560780 4182240     20                    560790 4182370     2
  19       561450 4181590     20                    561620 4181590     2
  20       561620 4181590     20                    561730 4181590     2
  21       560780 4182130     20                    560700 4182130     2
  22       560700 4182130     20                    560600 4182135     2
  23       560780 4182240     20                    560700 4182240     2
  24       560780 4182070     20                    560480 4182330     2
  25       560780 4182070     20                    560780 4182130     2
*8              AIRCRAFT RUNWAY INFORMATION
  31       560350 4181260                           328.       2438
  31     1111000000000111000
  31          619      557      956      570      0.0      0.0      568      170
  31          619      557      956      570      0.0      0.0      568      170
  31   5   5
310106         0000     0000     0000     0000     0000     0000     1000     0000
31010614  10   9   7   6   5   8  18   4  25   3   1  19  20  16
310205         0000     0000     0000     1000     0000     0000     0000     0000
31020512  10   9   7   6   5   8  18   4  25   3   1  19
310403         0000     1000     0000     0000     0000     0000     0000     0000
31040310  10   9   7   6   5   8  18   4  21  22
310502         1000     0000     0000     0000     0000     0000     0000     0000
310502 8  10   9   7   6   5   8  18  23
310601         0000     0000     1000     0000     0000     0000     0000     1000
310601 7  10   9   7   6   5   8  14
310106         0000     0000     0000     0000     0000     0000     1000     0000
310106 6  16  20  19   1   2  15
310205         0000     0000     0000     1000     0000     0000     0000     0000
310205 4  19   1   2  15
310403         0000     1000     0000     0000     0000     0000     0000     0000
310403 6  22  21  25   3   2  15
310502         1000     0000     0000     0000     0000     0000     0000     0000
310502 6  23   4  25   3   2  15
310601         0000     0000     1000     0000     0000     0000     0000     1000
310601 7  14  18   4  25   3   2  15
  13       559510 4183250                           148.       2438
  13     1000111111000000000
  13          619      557      956      570      0.0      0.0      568       38
  13          619      557      956      570      0.0      0.0      568       38
  13   5   5
```

```
130106        0000      0000      0000      0000      0000      0000      1000      0000
130106 6  15   2   1  19  20  17
130205        0000      0000      0000      1000      0000      0000      0000      0000
130205 4  15   2   1  19
130403        0000      1000      0000      0000      0000      0000      0000      1000
130403 6  15   2   3  25  21  22
130502        1000      0000      0000      0000      0000      0000      0000      0000
130502 6  15   2   3  25   4  23
130601        0000      0000      1000      0000      0000      0000      0000      0000
130601 7  15   2   3  25   4  18  11
130106        0000      0000      0000      0000      0000      0000      1000      0000
13010614  17  20  19   1   3  25   4  18   8   5   6   7   9  10
130205        0000      0000      0000      1000      0000      0000      0000      0000
13020511  19   1   3   4  18   8   5   6   7   9  10
130403        0000      1000      0000      0000      0000      0000      0000      1000
13040310  22  21   4  18   8   5   6   7   9  10
130502        1000      0000      0000      0000      0000      0000      0000      0000
130502 8  23  18   8   5   6   7   9  10
130601        0000      0000      1000      0000      0000      0000      0000      0000
130601 7  11   8   5   6   7   9  10
  25       561210 4182640                                269.      2194
  25     00000000000111000000
  25           137       123       212       126       0.0       0.0       126       170
  25           137       123       212       126       0.0       0.0       126       170
  25   5   5
250106        0000      0000      0000      0000      0000      0000      1000      0000
250106 7  12  15   2   1  19  20  16
250205        0000      0000      0000      1000      0000      0000      0000      0000
250205 5  12  15   2   1  19
250403        0000      1000      0000      0000      0000      0000      0000      1000
250403 7  12  15   2   3  25  21  22
250502        1000      0000      0000      0000      0000      0000      0000      0000
250502 7  12  15   2   3  25   4  23
250601        0000      0000      1000      0000      0000      0000      0000      0000
250601 8  12  15   2   3  25   4  18  14
250106        0000      0000      0000      0000      0000      0000      1000      0000
25010611  16  20  19   1   3  25   4  18   8   5   6
250205        0000      0000      0000      1000      0000      0000      0000      0000
250205 9  19   1   3  25   4  18   8   5   6
250403        0000      1000      0000      0000      0000      0000      0000      1000
250403 7  22  21   4  18   8   5   6
250502        1000      0000      0000      0000      0000      0000      0000      0000
250502 5  23  18   8   5   6
250601        0000      0000      1000      0000      0000      0000      0000      0000
250601 4  14   8   5   6
  05       560.22 4182.10      4.0                           47.5      .335
  05     11111111111111111000
  05           0.0       0.0       0.0       0.0       723       345       0.0       0.0
  05           0.0       0.0       0.0       0.0       723       345       0.0       0.0
  05   2   2
050104        0.0       0.0       0.0       0.0       1.0       0.0       0.0       0.0
050104 3  24   3   1
050203        0.0       0.0       0.0       0.0       0.0       1.0       0.0       0.0
050203 4  24  25  21  22
050104        0.0       0.0       0.0       0.0       1.0       0.0       0.0       0.0
050104 3   1   3  13
050203        0.0       0.0       0.0       0.0       0.0       1.0       0.0       0.0
050203 4  22  21  25  13
*9                AEROSPACE GROUND EQUIPMENT
   3.036    0.170    0.665    0.046    0.041
   3.036    0.170    0.665    0.046    0.041
   3.036    0.170    0.665    0.046    0.041
```

2.912	0.250	2.195	0.102	0.138
1.802	0.212	1.970	0.172	0.143
3.776	0.445	4.129	0.361	0.299
1.942	0.108	0.169	0.011	0.009
3.036	0.170	0.665	0.046	0.041
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	00	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3.036	0.170	0.665	0.046	0.041
3.036	0.170	0.665	0.046	0.041
3.036	0.170	0.665	0.046	0.041
2.912	0.250	2.195	0.102	0.138
1.802	0.212	1.970	0.172	0.143
3.776	0.445	4.129	0.361	0.299
1.942	0.108	0.169	0.011	0.009
3.036	0.170	0.665	0.046	0.041
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

```
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
        0       0       0       0       0
*10             AIRCRAFT REFUELING AND FUEL VENTING TOTALS
                  2       2       2       2       2       2       2       2
    4    20000.   8000.   8000.   30000.  2500.   3000.   2000.   4000.
    1          0.
    1         10.
    1         10.
*11             VEHICLE AGE DISTRIBUTION
    3             1   11976
*12             NUMBER OF AIRBASE POINT SOURCES
   31
*13             TRAINING FIRE POINT SOURCES
    1
2005    3   56012  418299                                          600   15000
*14               TEST CELL POINT SOURCES
   10
2120    1   56198  418128      640      823      549    41316    2345     299     640
2120    4 142        9       45      126        0
2121    1   56199  418128      762     1098      732    44316    2498     387     762
2121    1  40       18       14       59        0
2122    1   56200  418128      610      915      610    45316    2620     274     610
2122    2  40       15       14       59        0
2123    1   56201  418128      610      915      610    45316    2620     274     610
2123    3  40       18       14       59        0
2124    1   56207  418127      976      305      183    42872    2315     091     884
2124   11 120       27       18       45        0
2125    1   56208  418127      976      305      183    42872    2315     091     884
2125   15 120       27       18       45        0
2126    1   56221  418119     1372     1372      915    43872    2406     473    1220
2126    9  32       84       21      105        0
2127    1   56221  418117     1372     1372      915    43872    2406     473    1220
2127    9  28       84       21      105        0
2128    1   56228  418104     1890     1555     1037    44483    2559     534     610
2128   10 200       84       57      336        0
2129    1   56228  418102     1890     1555     1037    44483    2559     534     610
2129    7  56       36       48      156        0
*15               RUNUP STAND POINT SOURCES
    5
2206    2   56094  418109      122                      50000    2500     043     200
2206   11  10       12       78       30
2206    2  10       12       78       30
2207    1   56204  418148      549      091      061    43038    2999     030     549
2207   20 180       45       36       99        0
2208    1   56204  418147      549      091      061    43038    2999     030     549
2208   20 132       45       36       99        0
2209    1   56204  418146      549      091      061    43038    2999     030     549
```

```
2209   20 172       52       42       116              0
2210    1   56205   418146      549       091       061    43038     2999      030      549
2210   20 132       45       36       99               0
2211    1   56206   418146      549       091       061    43038     2999      030      549
2211   18 156       36       30       54               0
*16              POWER PLANT POINT SOURCES
  11
2328    1   56147   418181     1555       300       300    51650     1000      137     1372
2328   13    1.0      1.0      436    0
2329    1   56147   418181     1555       300       300    52200     1000      137     1372
2329   10    .005     .001     2040    0
2330    1   56148   418181     1555       300       300    51930     1000      137     1372
2330   13     1.0      1.0      436    0
2331    1   56148   418181     1555       300       300    52480     1000      137     1372
2331   10    .005     .001     2040    0
2332    1   56149   418181     1555       300       300    40260     1000      137     1372
2332   14    1.0    1.000      436    0
2333    1   56149   418181     1555       300       300    40320     1000      137     1372
2333   11    .005     .001     2040    0
2334    1   56151   418281     1555       300       300    40430     1000      137     1372
2334   14   1.0      1.0      436    0
2335    1   56151   418281     1555       300       300    40540     1000      137     1372
2335   11    .005     .001     2040    0
2336    1   56132   418058      465       122        61    56090     1000       61      366
2336   11    .005     .002     0068    0
2337    1   56132   418058      465       122        61    56090     1000       61      366
2337   11    .005     .002     0068    0
2338    1   56132   418058      488        92        61    58870     1000       46      366
2338   11    .005     .002     0068    0
*17              INCINERATOR POINT SOURCES
   0
*18              PETROLEUM STORAGE TANK POINT SOURCES
   3
2403    0   56196   418151      915      1500      1500
2403        4   114609.8111922750                          12.5
2403    1   12195                                  0
2404    0   56028   418291      412      8000      8000
2404        2   1207949.321460950                          28.0
2404    2    3049     45                           0
2405    0   56224   418142      000     16800     16800
2405        3   117616.62 3785000                   1.0       8.0
2405    2    3049     6                            1
*19              OTHER AIRBASE POINT SOURCES
   0
*20              AIRBASE AREA SOURCE GEOMETRIES
  39
3011        56242   418175      100      7500
3012        56245   418109      100      7500
3013        56205   418154      366      2500
3014        56199   418125      366      6000
3015        56150   418185      366      2500
3016        56098   418248      366      5000
3115        56196   418051      900      1500
3116        56028   418291      400      8000
3117        56224   418142      000     16800
3118       561.45  4181.82     4.87      30.0       2.0
3215        56199   418125      304      6000
3216        56115   418246      304     10000
3300        56145   418218      100     75000
3301        56086   418221      100     50000
3302        56123   418185      100     50000
```

```
3303        56222  418171      100    50000
3304        56182  418143      100    75000
3305        56180  418076      100    50000
3306        56241  418091      100    90000
3307        56300  418234      100    52000
3308        56315  418163      100    40000
3309        56275  418163      100    40000
3310        56215  418213      100    77000
3311        56299  418193      100    75000
3400        56122  418193     1920    36000
3401        56186  418085     1158     7000
3402        56233  418123     1006    15000
3403        56213  418084     1372     6600
3500        56300  418234      800    52000
3501        56315  418163      800    40000
3502        56275  418163      800    40000
3503        56215  418213      500    77000
3504        56174  418154     1200   210000
3505        56299  418193     1200    75000
3600        56153  418077      900    61000
3601        56196  418120      500   137000
3800        56169  418200       50   160000
3801        56206  418096       50   100000
3802        56298  418196       50   120000
*21              AIR BASE AREA SOURCES WITH HC FILLING,WORKING LOSSES AND SPILLAGE
  6
3011      7851311                0.     0.     0.     0.     0.
3011          0.       0.        0.     0.     0.     0.     0.      47
3012       57b627      0.        0.     0.     0.     0.     0.
3012          75       0.        0.     0.     0.     0.     0.      38
3013          0.       0.        0.   78728    0.     0.     0.
3013          0.       0.        0.     0.     0.     0.     0.      16
3014       468277   558910       0.     0.     0.     0.     0.
3014          0.       0.        0.     0.     0.     0.     0.     150
3015       11446       0.        0.     0.     0.     0.     0.
3015          85       0.        0.     0.     0.     0.     0.     112
3016          0.  7598388        0.     0.     0.     0.     0.
3016          0.       0.        0.     0.     0.     0.     0.      56
*22              STORAGE TANK HYDROCARBON BREATHING LOSS AREA SOURCES
  4
3115   4   1   1     1341                          122
3116   2   1   2     2683                           31
3117   3   1   2     1341                           31
3118   4   1   4     3.55                  .60     1.22
*23              PETROLEUM TANK TRUCK PARKING AREA SOURCES
  2
3215   1   5          530        82      122
3216   2   7         2325        77      153
*24              MILITARY AND CIVILIAN VEHICLE HC BREATHING LOSSES
  12
3300   1 524          9384       50
3301   1 410          8362       50
3302   11834          8403       50
3303   1 299          8816       50
3304   11045          8403       50
3305   1 154          8419       50
3306   1 371          8377       50
3307   1 291          8328       50
3308   1 291          8328       50
3309   1 291          8328       50
```

```
3310    1 298          8328       50
3311    1 206          8328       50
*25              OTHER EVAPORATIVE HYDROCARBON SOURCES
   4
3400          8045
3401           573
3402          2952
3403           392
*26               SPACE HEATING AREA SOURCES
   6
3500  16       1.0        1.0       120    0
3501  16       1.0   1.0          120    0
3502  16       1.0      1.0       120    0
3503  16       1.0    1.0         124    0
3504  16       1.0    1.0         070    0
3505  16       1.0    1.0         030    0
*27               OFF-ROAD VEHICLE AREA SOURCES
   2
3600          1716
3601           024
*28               MILITARY MOTOR VEHICLE AREA SOURCES
   7
3300    3     2000      3912    48909     5235     6176      629       00
3300    4   24   9  10   4    0
3300 597
3301    3     2000      1509     8443     1803      693      629       00
3301    1    3    0    1    0    0
3301 125
3302    3     2000       826     9171     2358     2471      629       00
3302    0    3    1    3    0    0
3302 148
3303    3     2000      2315    23930     3659     3857      629       00
3303    1    5    1    3    0    0
3303 334
3304    3     2000       826     9171     2358     2471      629       00
3304    0    2    1    2    0    0
3304 150
3305    3     2000       962     8970     1558      975      629       00
3305    0    5    0    1    0    0
3305 125
3306    3     2000       826     9171     2358     2471      629       00
3306    0    1    0    1    0    0
3306 152
*29               CIVILIAN MOTOR VEHICLE AREA SOURCES
   3
3800    3     1000    437723    18619     4690       00       00     4690
3800145962   16    0    0   16
3800155 2
3801    3     1000     65523     2803      715       00       00      686
3801 218    9    2    0    0    2
3801 232
3802    3     1000     21221      915      229       00       00      229
3802  71    3    1    0    0    1
3802  75
*30               NUMBER OF AIRBASE LINE SOURCE GEOMETRIES
   5
4100          56152   418256       50     1600      300    56226   418249       50
4101          56226   418249       50     1600      300    56250   418214       50
4102          56250   418214       50     1600      300    56250   418144       50
```

```
4103        56250   418144       50      2000       300    56333   418142       50
4104        56250   418144       50      1600       300    56251   418105       50
*31             MILITARY MOTOR VEHICLE LINE SOURCES
   0
*32             CIVILIAN MOTOR VEHICLE LINE SOURCES
   5
4100    1     2000   106925     4550      1138        00       00     1138
4101    1     2000    59876     2548       637        00       00      637
4102    1     2000   150077     6386      1597        00       00     1597
4103    1     2000   295571    12578      3144        00       00     3144
4104    1     2000    76375     3250       813        00       00      813
*33             OTHER NON-AIRCRAFT LINE SOURCES
   0
*34             ENVIRON POINT SOURCES
   0
*35             ENVIRON AREA SOURCES
   3
   7
4400       556.22 4159.73     6.  20000.
4400     86997.7511910.4113588.22 1947.09 1549.39
4401       542.04 4202.69     6.  20000.
4401     86997.7511910.4113588.22 1947.09 1549.39
4402       551.44 4180.77     6.  20000.
4402     86997.7523820.8227176.44 3894.18 3098.78
4403       573.96 4174.84     6.  20000.
4403     86997.7523820.8227176.44 3894.18 3098.78
4404       564.57 4192.20     6.  20000.
4404     86997.7523820.8227176.44 3894.18 3098.78
4405       592.09 4154.34     6.  20000.
4405     86997.7511910.4113588.22 1947.09 1549.39
4406       585.60 4193.53     6.  20000.
4406     86997.7511910.4113588.22 1947.09 1549.39
*36             ENVIRON LINE SOURCES
   0
*37             ENVIRON NON-ROADWAY LINE SOURCES
   0
```

SAMPLE 2

SHORT-TERM INPUT

ALAMEDA NAVAL AIR STATION

```
*1 TITLE INFORMATION
ALAMEDA NAS
ENV 20 PTS
*2 GENERAL PROBLEM DESCRIPTION
&JUNE76 RUN. ALAMEDA NAS. BASE PLUS ENVIRONS. WORST CASE MORNING. F STABILITY
     0
     1     2     3     4     5
     0
  557.30 4183.21        1       1     1.0
    20
  558.24 4182.87
  559.18 4182.53
  560.12 4182.18
  561.06 4181.84
  562.00 4181.50
  562.94 4181.16
  563.88 4180.82
  564.82 4180.47
  565.76 4180.13
  566.70 4179.79
  567.64 4179.45
  569.52 4178.76
  571.40 4178.08
  573.28 4177.40
  575.16 4176.71
  577.04 4176.03
  578.91 4175.34
  582.67 4173.98
  586.43 4172.61
  590.19 4171.24
     0
     1    31     1  49.4
*3 PERIOD DEFINITION
     1     1
*4 METEOROLOGICAL INFORMATION
     8     6   1.0  290.   47.   75.
*5 TEMPORAL DISTRIBUTION INPUT INDICATOR
    0
*6 TEMPORAL DISTRIBUTION OF AIRBASE POINT SOURCES
 101
 102        0.125       .2   .0825
 103        0.125       .2   .0825
 104  11
2324         .042   0.143    .101
2329
2330         .042   0.143    .101
2331
2332         .042   0.143    .101
2333
2334         .042   0.143    .101
2335
2336
2337
2338
*7 TEMPORAL DISTRIBUTION OF AIRBASE AREA SOURCES
   2
 110        0.125       .2   .0825
 111    0.
 112         .083      .20    .083
*10  TEMPORAL DISTRIBUTION OF ENVIRON AREA SOURCES
   1
 204    0
```

SAMPLE 2

LONG-TERM INPUT

ALAMEDA NAVAL AIR STATION

```
#1
ALAMEDA NAS
1.0 KM GRID
#2
ANNUAL CONCENTRATIONS TO INDICATE IMPACT OF ALL AIRBASE SOURCES

     1     2     3     4     5
     0     .
   555.0  4170.0       17        17       1.0
     0
     0
#3
     1
     1
    13
#4
  -1
```

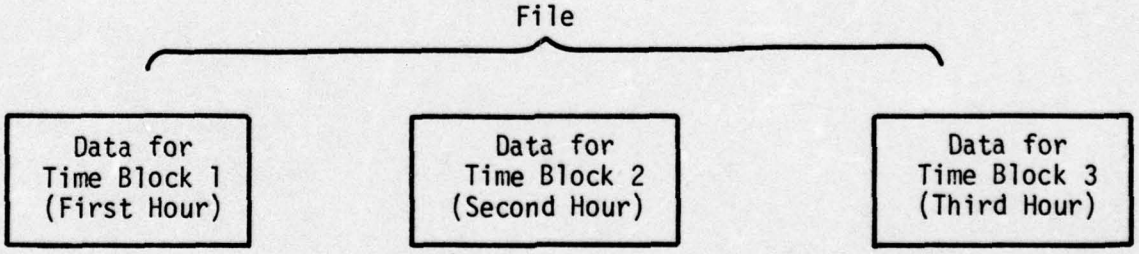
APPENDIX F

FORMAT OF DATA TAPE

The AQAM short-term and long-term dispersion models write all pollutant concentration data on a disk file as well as the line printer. This file is defined as logical unit 15 and can be permanently recorded for a certain dispersion run by cataloging the file on a permanent file device. The file is written by formatted write statements creating logical record lengths of 10 Bytes. It is possible, therefore, to create a coded tape with fixed length records and blocks which is compatible with most other computing facilities. These data can be used later for plotting or statistically analyzing results. The format for this file is described below.

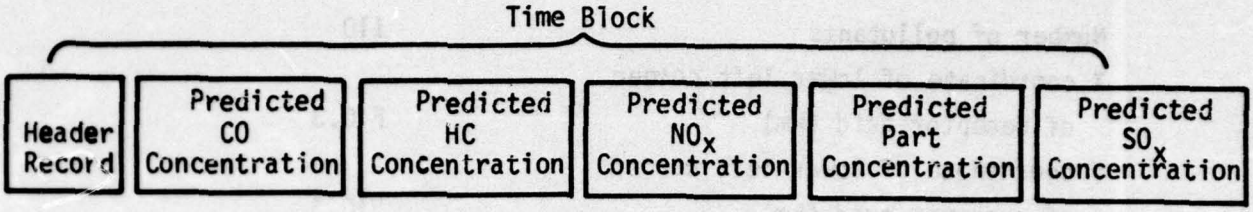
Data are written in time blocks. Each time block is equivalent to the time period for which pollutant concentrations have been calculated (see example below).

For a short-term run modeling a three-hour period, the following file would be created:



A time block is always a one-hour period for a short-term run, but may range from three to twenty-four hours for a long-term run (see tables 16 and 20). Within each time block, a header record is written containing information necessary for reading the pollutant concentration data as well as describing the time period and the structure of the receptor grid (see

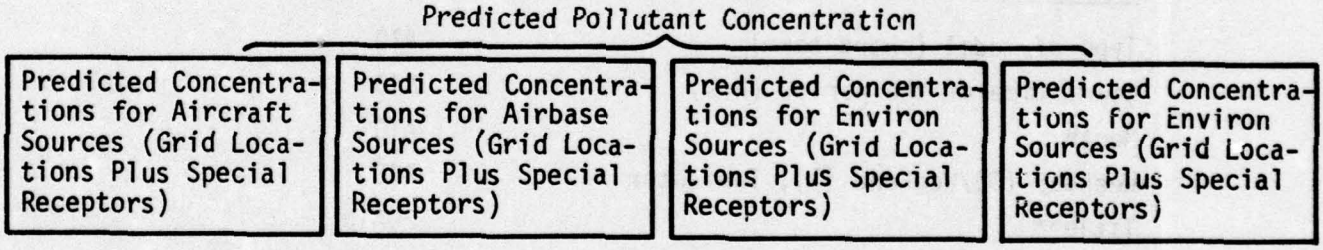
example below).



Each block of pollutant concentrations contains predictions at each receptor defined for each of the following source categories:

1. Aircraft
2. Airbase
3. Environ
4. Total (aircraft + airbase + environ)

The following example illustrates this structure:



The format for the long-term header record is listed below:

Parameter	Format
Type of model (long-term)	A10
Start time of the period (hrs)	A10
End time of the period (hrs)	A10
Month	A10
Weekday (0)/Weekend (1)	I10
Title*	20A10

*The title is read and stored by the model in a 20A4 format. These data are written in an 8A10 format to maintain a logical record length of 10 Bytes.

Parameters	Format
Number of pollutants	I10
X coordinate of lower left corner of receptor grid (km)	F10.3
Y coordinate of lower left corner of receptor grid (km)	F10.3
Number of grid rows	I10
Number of grid columns	I10
Row and column grid spacing (km)	F10.3
Number of special receptors	I10
X coordinate of special receptor* (km)	F10.3
Y coordinate of special receptor* (km)	F10.3

The format for the short-term header record is listed below:

Parameter	Format
Type of model (short-term)	A10
Start time of the period (hrs)	A10
Month	A10
Weekday (0)/Weekend (1), Indicator	I10
Title**	20A10
X coordinate of lower left corner of receptor grid (km)	F10.3
Y coordinate of lower left corner of receptor grid (km)	F10.3
Number of grid rows	I10
Number of grid columns	I10
Row and column grid spacing (km)	F10.3
Number of special receptors	I10

*These two parameters are repeated for the total number of special receptors to be defined.

**The title is read and stored by the model in a 20A4 format. These data are written in an 8A10 format to maintain a logical record length of 10 Bytes.

Parameter	Format
X coordinate of special receptor* (km)	F10.3
Y coordinate of special receptor* (km)	F10.3
Stability category	I10
Windspeed	F10.3
Wind direction (degree from true north)	F10.3
Temperature (°F)	F10.3
Mixing depth (meter)	F10.3

The predicted concentrations are written for each category in the following manner:

$$\begin{array}{cccc} C_{k_1} & C_{k_2} & C_{k_3} & \ldots C_{km} \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ C_{31} & C_{32} & C_{33} & \ldots C_{3m} \\ C_{21} & C_{22} & C_{23} & \ldots C_{2m} \\ C_{11} & C_{12} & C_{13} & \ldots C_{3m} \end{array}$$

where

C is the pollutant concentration on the grid
m is the number of columns in the grid
k is the number of rows in the grid

The predictions for the special receptors are written as follows:

$$CS_1 \quad CS_2 \quad CS_3 \quad \ldots CS_n$$

where

CS is the pollutant concentration at the special receptor
n is the number of special receptors

APPENDIX G

DEFINITION OF INPUT VARIABLE NAMES

It is assumed that users wishing to utilize this guide to code and punch raw airbase data into AQAM input data decks will require no more than an elementary knowledge of the AQAM computer codes. Generally, this is true; however, for an occasional application in which a user may desire to check the logic of certain areas of the AQAM codes, supplementary information may be required. To provide assistance to users involved with such applications, tables have been provided which list all input variable names and their definitions.

The input variable names are listed according to two ordering methods, rank order by data set and alphabetical. The first presentation includes a list of all input variable names, their associated definitions, and some supplementary information. The variables are listed according to their associated data sets and ranked within each data set group in the order in which they are found in the code. Variables are mentioned within the specific data set group in which it was first assigned a value. If, in subsequent data sets, this variable is reassigned to a new value but its associated definition is not changed, the variable will <u>not</u> be repeated in the list. If the variable name is reused and its definition altered, the name will appear in the list of input variables associated with this data set in which the alteration occurred. The second presentation contains the same information mentioned above; however, the data are ranked alphabetically according to the variable name. The lists follow.

SOURCE INVENTORY INPUT VARIABLES

ORDERED BY DATA SET

Data set	Variable name	Subroutine overlay	Array	Definition
1	AB1234	FIRST	No	Data set identifier
1	ITITLE	LETTER	Yes	Block title information
1	IDMAX	FIRST	No	Total number of sources described
1	DES	FIRST	Yes	Description of grid location
1	ID1	FIRST	No	Degree of latitude
1	IM1	FIRST	No	Minutes of latitude
1	S1	FIRST	No	Seconds of latitude
1	ID2	FIRST	No	Degrees of longitude
1	IM2	FIRST	No	Minutes of longitude
1	S2	FIRST	No	Seconds of longitude
1	NID	FIRST	No	Source identifier
1	FACND	FIRST	No	Source name
1	DES	FIRST	Yes	VERNDL description of the source
2	---	---	---	Namelist input (see table 2)
3	TBAR	SRCINV	No	Average annual temperature (°F)
3	ADD	SRCINV	No	Annual degree days
3	PA	SRCINV	No	Pressure altitude (100 ft)
3	WSBAR	SRCINV	No	Annual average wind speed (meter/sec)
3	DTBAR	SRCINV	No	Daily average temperature variation (°F)
4	NACTYP	ACEMIV	No	Total number of aircraft types
4	NRNWYS	ACEMIV	No	Total number of runways used
4	NPKAR	ACEMIV	No	Total number of parking areas
4	NSCASE	ACEMIV	No	Total number of special case wind conditions
4	NLSEGS	ACEMIV	No	Total number of taxipath segments
5	IACTYP	ACEMIV	Yes	AIAGRAFT identification number
5	ANNARR	ACEMIV	Yes	Annual number of arrival operations
5	ANNDEP	ACEMIV	Yes	Annual number of departure operations
5	ANNTGO	ACEMIV	Yes	Annual number of touch-and-go cycles
6	IDPRKA	ACEMIV	Yes	Identification number of parking area
6	NPASA	ACEMIV	No	Total number of squares making up parking area
6	PAREA	ACEMIV	Yes	X, Y coordinate and length of side square (km)

Data set	Variable name	Subroutine overlay	Array	Definition
7	ACLNSG	ACEMIV	Yes	Segment identification, X, Y, Z coordinate at start of segment, delta Y and Z, X, Y, Z coordinate at end of segment (km)
8	IRNWY	ACEMIV	Yes	Identification number for runway
8	RNWY	ACEMIV	Yes	X, Y, Z coordinate at start of runway (km), delta Y and Z, runway angle (degree from TN)
8	DISRNW	ACEMIV	Yes	Runway length (km)
8	ID	ACEMIV	No	Runway identification number
8	INSWD	ACEMIV	Yes	Runway use indication, special case runway use identification
8	RNWYAR	ACEMIV	Yes	Number of aircraft arrivals
8	RNWYDP	ACEMIV	Yes	Number of aircraft departures
8	NIBTT	ACEMIV	Yes	Number of inbound taxiway paths
8	NOBTT	ACEMIV	Yes	Number of outbound taxiway paths
8	IDRW	ACEMIV	No	Runway identification
8	IDIBTW	ACEMIV	Yes	Inbound taxipath identifier
8	IDIBPA	ACEMIV	Yes	Identifier of parking area connected to this taxipath
8	TTARFR	ACEMIV	Yes	Inbound taxiway usage
8	IDTW	ACEMIV	No	Inbound taxipath identifier
8	IDPA	ACEMIV	No	Identifier of parking area connected to this taxipath
8	NSEGS	ACEMIV	No	Number of segments forming this taxipath
8	IIBSEG	ACEMIV	Yes	Identifier for the segments forming this taxipath
9	ARSVEM	ACEMIV	Yes	Service vehicle emissions for arriving aircraft (kg/yr)
9	DPSVEM	ACEMIV	Yes	Service vehicle emissions for departing aircraft (kg/yr)
10	DES1	ACEMIV	Yes	Fuel identification for aircraft
10	INPUTS	ACEMIV	No	Refueling value identification
10	ACFUEL	ACEMIV	Yes	Refueling value for aircraft
10	ACSPIL	ACEMIV	Yes	Fuel spillage value for aircraft
10	ARFLVT	ACEMIV	Yes	Fuel venting for arriving aircraft
10	DPFLVT	ACEMIV	Yes	Fuel venting for departing aircraft

Data set	Variable name	Subroutine overlay	Array	Definition
11	IAREA	SRCINV	No	Identifier of emission factor for motor vehicles
11	IAATML	SRCINV	No	Indication for input of military AGE distribution
11	IAATCV	SRCINV	No	Indication for input of civilian AGE distribution
11	IYEAR	SRCINV	NO	Year to begin vehicle calculations
11	JJ	TREFCT	No	Identifier of vehicle class to be defined
11	OPT	TREFCT	Yes	Indicator for definition of AGE distribution in this class
11	RFGIS	TREFCT	Yes	AGE distribution
12	NMAX	ABPTIV	No	Number of sources defined
13	ABPTS	ABPTIV	Yes	Source identification, plume flag, X and Y coordinates (km), height of source (meter), delta X and Z, heat rate, number of fires, fuel consumed
14	ABPTS	ABPTIV	Yes	Source identification, number of engines, X and Y coordinates (km), height of stack (meter), delta Y and Z, gas temperature (°K), gas velocity, stack diameter (meter), building height (meter)
14	SID	ABPTIV	No	Source identifier
14	IDENG	ABPTIV	No	Identification of engine tested
14	TESTS	ABPTIV	No	Annual number of engine tests
14	TIME	ABPTIV	Yes	Test time in each mode (min)
15	ABPTS	ABPTIV	Yes	Source identification, number of engines, X, Y coordinates (km), height of stack (meter), delta Y and Z, gas temperature, gas velocity (meter/sec), stack diameter (meter), building height (meter)
16	ABPTS	ABPTIV	Yes	Source identification, plume flag, X and Y coordinates (km), height of stack (meter), delta Y and Z, gas temperature (°K), gas velocity (meter/sec), stack diameter (meter), building height (meter)
16	MFCID	ABPTIV	No	Emission factor identification
16	S	ABPTIV	No	Amount of sulfur in fuel (fraction of total fuel)

Data set	Variable name	Subroutine overlay	Array	Definition
16	A	ABPTIV	No	Amount of ash in fuel (fraction of total fuel)
16	ANNUSE	ABPTIV	No	Amount of fuel burned (metric ton)
16	MCFLG	ABPTIV	No	Indicator of controlled pollutants
16	NPLTCT	ABPTIV	No	Number of pollutants controlled
16	IDPL	ABPTIV	Yes	Identification of pollutant controlled
16	CNTRL	ABPTIV	Yes	Indicator of controlled pollutants
17	ABPTS	ABPTIV	Yes	Source identification, plume flag, X, Y coordinates (km), height of stack (meter), delta Y and Z, gas temperature (°K), gas velocity (meter/sec), stack diameter (meter), building height (meter)
18	ABPTS	ABPTIV	Yes	Source identification, plume flag, X and Y coordinates (km), height of stack (meter), delta Y and Z
18	IDFUEL	ABPTIV	No	Identification of fuel used
18	IROOF	ABPTIV	No	Roof identification
18	CAP	ABPTIV	No	Tank capacity (kl)
18	TTMP	ABPTIV	No	Temperature of fuel in tank (°F)
18	TMPDIF	ABPTIV	No	Daily average temperature variation (°F) of fuel vapor space (meter)
18	DIAM	ABPTIV	No	Tank diameter
18	NTANKS	ABPTIV	No	Number of tanks same size
18	HUS	ABPTIV	No	Average height of vapor space (meter)
18	C1	ABPTIV	No	Throughput factor
18	C2	ABPTIV	No	Paint factor
18	C3	ABPTIV	No	Tank diameter factor
18	IUNGRT	ABPTIV	No	Tank type identifier
18	C1	ABPTIV	No	Rivit factor
18	C2	ABPTIV	No	Seal factor
18	C3	ABPTIV	No	Paint factor
19	ABPTS	ABPTIV	Yes	Source identification, plume flag, X and Y coordinates (km), height of stack (meter), delta Y and Z, gas temperature (°K), gas velocity (meter/sec), tank diameter (meter), building height (meter)
19	SOREM	ABPTIV	Yes	Emission of CO, HC, NOX, PT, SOX (metric ton/yr)

Data set	Variable name	Subroutine overlay	Array	Definition
20	ABARS	ABARIV	Yes	Source identification, X, Y, and Z coordinate (km), length of side (meter), delta Z
21	NMAXE	EVAPHC	No	Number of area sources defined
21	YRUSE	EVAPHC	Yes	Amount of fuel processed (kiloliter/yr)
21	CC	EVAPHC	Yes	Throughput factor for fuel processed (kiloliter/yr)
21	SPILL	EVAPHC	No	Amount of fuel spilled (metric ton/yr)
22	IDROOF	EVAPHC	No	Roof identifier
22	NTANKS	EVAPHC	No	Number of fixed roof tanks in this area
22	DIAM	EVAPHC	No	Average diameter of tanks (meter)
22	C1	EVAPHC	No	Paint factor (fixed roof)
22	C2	EVAPHC	No	Tank diameter factor (fixed roof)
22	C3	EVAPHC	No	Average height (meter) of vapor space (fixed roof)
23	NTRKS	GUAPHC	No	Number of tank trucks parked
23	FRCFUL	GUAPHC	No	Fraction each truck is filled (fraction)
24	NVEH	EVAPHC	No	Number of civilian/military vehicles parked
24	TNKCAP	EVAPHC	No	Tank capacity (liter)
25	ANNEM	EVAPHC	No	Total hydrocarbon emissions (metric ton/yr)
26	IDEMFC	ABARIV	No	Emission factor identification
26	ICNTRL	ABARIV	No	Indication of controlled pollutants
27	ANNGAL	ABARIV	No	Amount of diesel fuel consumed (1000 gal/yr)
27	XMIGAL	ABARIV	No	Diesel fuel consumption rate
28	IOPT	VEHIC	No	Vehicle emission factor identification
28	SPEED	VEHIC	No	Average speed of vehicles (mph)
28	VM	VEHIC	Yes	Vehicle miles for vehicle
28	NCDST	VEHIC	Yes	Number of cold starts for vehicle (1000/yr)
28	NHSOAK	VEHIC	No	Number of hot soaks for vehicle (1000/yr)
29	---	VEHIC	---	No new variable defined

Data set	Variable name	Subroutine overlay	Array	Definition
30	ABLNS	ABLNIV	Yes	Source identification, X, Y, and Z coordinate (km) for beginning of line, width of line (meter), delta Z; X, Y, Z coordinate (km) for end of line
31	---	VEHIC	---	No new variable defined
32	---	VEHIC	---	No new variable defined
33	EM	ABLNIV	Yes	Emissions of CO, HC, NOX, PT, and SOX (metric ton/yr)
	ENPTS	ENEMIV	Yes	Source identification, plume flag, X, Y coordinates (km), stack height (meter), delta Y and Z, gas temperature (°K), gas velocity (meter/sec), stack diameter (meter), building height (meter)
35	IOPT	ENEMIV	No	Environ area source option
35	NMAX1	ENEMIV	No	Number of environ sources
35	ENARS	ENEMIV	Yes	Source identification, X, Y, and Z coordinate (km), length of side (meter), delta Z
35	NMAX2	ENEMIV	No	Number of environ mobile areas (metric ton/yr)
35	CLDST	ENEMIV	No	Speed of vehicles in mobile area (mph)
35	CDSTN	ENEMIV	Yes	Number of cold starts in mobile area (1000/yr)
35	HSOAKN	ENEMIV	No	Number of hot soaks in mobile area (1000/yr)
35	FRCTLU	ENEMIV	Yes	Fraction of land use area used
36	ENLNS	ENEMIV	Yes	Source identification, plume flag, X, Y, and Z coordinate (km) for start of line, width of line (meter), delta Z; X, Y, and Z coordinate for end of line (km)
37	---	ENEMIV	---	No new variable defined

SOURCE INVENTORY INPUT VARIABLES

ORDERED ALPHABETICALLY

Variable name	Subroutine overlay	Array	Data sets	Description
A	ABPTIV	No	16,26	Amount of ash in fuel
ABARS	ABARIV	Yes	20	Source identification, X, Y, and Z coordinates, length of side, delta Z
ABLNS	ABLNIV	Yes	30	Source identification, X, Y, and Z coordinate for beginning of line, width of line, delta Z; X, Y, and Z coordinate for end of line
ABPTS	ABPTIV	No	12-19	Number of sources defined
AB1234	FIRST	No	1-37	Data set identifier
ACFUEL	ACEMIV	Yes	10	Refueling value for aircraft
ACLNSG	ACEMIV	Yes	7	Segment identification, X, Y, and Z coordinates at start of segment, delta Y and Z; X, Y, Z coordinates at end of segment
ACSPIL	ACEMIV	Yes	10	Fuel spillage value for aircraft
ADD	SRCINV	No	3	Annual degree days
ANNARR	ACEMIV	Yes	5	Annual number of arrival operations
ANNDEP	ACEMIV	Yes	5	Annual number of departure operations
ANNEM	EVAPHC	No	25	Total hydrocarbon emissions
ANNGAL	ABARIV	No	27	Amount of diesel fuel consumed
ANNTGO	ACEMIV	Yes	5	Annual number of touch and go cycles
ANNUSE	ABPTIV	No	16,17, 18,26	Amount pollutant is controlled
ARFLVT	ACEMIV	Yes	10	Fuel venting values for departing aircraft
ARSVEM	ACEMIV	Yes	9	Service vehicle emission for departing aircraft
CAP	ABPTIV	No	18	Tank capacity
CC	EVAPHC	Yes	21	Throughput factor for fuel processed
CDSTN	ENEMIV	Yes	35,36	Number of cold starts in mobile areas
CLDST	ENEMIV	No	35,36	Speed of vehicles in mobile areas
CNTRL	ABARIV	No	16,17, 26	Indicator of controlled pollutants
C1	ABPTIV	No	18,20	Throughput factor
C2	ABPTIV	No	18,22	Paint factor
C3	ABPTIV	No	18,22	Tank diameter factor
DES	FIRST	Yes	1	Description of the source
DIAM	ABPTIV	No	18,22, 23	Tank diameter

Variable Name	Subroutine overlay	Array	Data set	Definition
DISRNW	ACEMIV	Yes	8	Runway length
DPFLVT	ACEMIV	Yes	10	Fuel venting values for departing aircraft
DPSVEM	ACEMIV	Yes	9	Service vehicle emissions for arriving aircraft
DTBAR	SRCINV	No	3	Daily average temperature variation
EM	ABLNIV	Yes	33	Emissions of CO, HC, NOX, PT, and SOX
ENARS	ENEMIV	Yes	35	Source identification, X, Y, and Z coordinates, length of side, delta Z
ENLNS	ENEMIV	Yes	36,37	Source identification, plume flag, X, Y, and Z coordinate for start of line, width of line, delta Z; X, Y, and Z coordinate for end of line
ENPTS	ENEMIV	Yes	34	Source identification, plume flag, X and Y coordinates, stack height, delta Y and Z, gas temperature, gas velocity, stack diameter, building height
FACND	FIRST	Yes	1	Source name
FRCFUL	EVAPHC	No	23,24	Fraction each tank is filled
FRCTLU	ENEMIV	Yes	35	Fraction of land area used
HSOAKN	ENEMIV	No	35,36	Number of hot soaks in mobile area
HVS	ABPTIV	No	18	Average height of vapor space
IAATCV	SRCINV	No	11	Indicator for input of civilian AGE distribution
IAATML	SRCINV	No	11	Indicator for input of military AGE distribution
IACTYP	ACEMIV	Yes	5	Aircraft identification number
IAREA	SRCINV	No	11	Identifier of emission factors for motor vehicles
ICNTRL	ABARIV	No	26	Indicator of controlled pollution
ID	ACEMIV	No	8	Runway identification number
IDEMFC	ABARIV	No	26	Emission factor identification
IDENG	ABPTIV	No	14,15	Identification of engine tested
IDFUEL	ABPTIV	No	18,22, 23,24	Identification of fuel used
IDIBPA	ACEMIV	Yes	8	Identifier of parking area connected to this taxipath
IDIBTW	ACEMIV	Yes	8	Inbound taxipath identifier
IDMAX	FIRST	No	1	Total number of sources

Variable name	Subroutine overlay	Array	Data set	Definition
IDOBPA	ACEMIV	Yes	8	Identifier of parking area connected to this taxipath
IDOBTW	ACEMIV	Yes	8	Outbound taxipath identifier
IDPA	ACEMIV	No	8	Identifier of parking area connected to this taxipath
IDPL	ABPTIV	Yes	16,17, 26	Identification of pollutant controlled
IDPRKA	ACEMIV	Yes	6	Identification number of parking area
IDROOF	EVAPHC	No	22	Roof identifier
IDRW	ACEMIV	No	8	Runway identification number
IDTW	ACEMIV	No	8	Inbound taxipath identifier
ID1	FIRST	No	1	Degrees of latitude
ID2	FIRST	No	1	Degrees of longitude
IIBSEG	ACEMIV	Yes	8	Identifier for the segments forming this taxipath
IM1	FIRST	No	1	Minutes of latitude
IM2	FIRST	No	1	Minutes of longitude
INPUTS	ACEMIV	No	10	Refueling valve indicator
IOBSEG	ACEMIV	Yes	8	Identifier for the segments forming this taxipath
IOPT	VEHIC	No	31,32, 35,28, 29	Vehicle emission factor identification
IRNWY	ACEMIV	Yes	8	Identification number for runway
IROOF	ABPTIV	No	18	Roof identification
ITITLE	LETTER	Yes	1	Block title information
IUNGAT	ABPTIV	No	18	Tank type identifier
IUSWD	ACEMIV	Yes	8	Runway use indicator, special case runway use indicator
IYEAR	SRCINV	No	11	Year to begin vehicle calculations
JJ	TREFCT	No	11	Identifier of vehicle class to be defined
MCFLG	ABPTIV	No	17,16	Indicator of controlled pollutants
MFCID	ABPTIV	No	16,17	Emission factor identification
NACTYP	ACEMIV	No	4	Total number of aircraft types
NCDST	VEHIC	Yes	28,29, 31,32	Number of cold starts for vehicles
NHSOAK	VEHIC	No	28,29, 31,32	Number of hot soaks for vehicles

Variable name	Subroutine overlay	Array	Data set	Definition
NIBTT	ACEMIV	Yes	8	Number of inbound taxiway paths
NID	FIRST	No	1	Source identifier
NLSEGS	ACEMIV	No	4	Total number of taxipath segments
NMAX	ABPTIV	No	12-20, 30,34	Number of sources defined
NMAXE	EVAPHC	No	21-29, 31,33	Number of area sources defined
NMAX1	ENEMIV	No	35	Number of definition sources
NMAX2	ENEMIV	No	35	Number of environ mobile areas
NOBTT	ACEMIV	Yes	8	Number of outbound taxiway paths
NPASA	ACEMIV	No	6	Total number of squares making up the parking area
NPKAR	ACEMIV	No	4	Total number of parking areas
NPLTCT	ABPTIV	No	16,17, 26	Number of pollutants controlled
NRNWYS	ACEMIV	No	4	Total number of runways used
NSCASE	ACEMIV	No	4	Total number of special case wind conditions
NSEGS	ACEMIV	No	8	Number of segments forming this taxipath
NTANKS	ABPTIV	No	18,22	Number of tanks same size
NTRKS	EVAPHC	No	23	Number of tank trucks parked
NVEH	EVAPHC	No	24	Number of civilian/military vehicles parked
OPT	TREFCT	Yes	11	Indicator for definition of AGE distribution in this class
PA	SRCINV	No	3	Pressure altitude
PAREA	ACEMIV	Yes	6	X, Y coordinate and length of SID of square
RFGIS	TREFCT	Yes	11	AGE distribution
RNWY	ACEMIV	Yes	8	X, Y, Z coordinate at start of runway, delta Y and Z, runway angle
RNWYAR	ACEMIV	Yes	8	Number of aircraft arrivals
RNWDP	ACEMIV	Yes	8	Number of aircraft departures
S	ABPTIV	No	16,26	Amount of sulfur in fuel
SID	ABPTIV	No	14-19, 21-29, 31-37	Source identifier
SOREM	ABPTIV	Yes	19,34, 35,37	Emission of CO, HC, NOX, PT, SOX

Variable name	Subroutine overlay	Array	Data set	Definition
SPEED	VEHIC	No	28,29, 31,32, 35,36	Average speed of vehicles
SPILL	ELAPHC	No	21	Amount of fuel spilled
S1	FIRST	No	1	Seconds of latitude
S2	FIRST	No	1	Seconds of longitude
TBAR	SRCINV	No	3	Average annual temperature
TESTS	ABPTIV	No	14,15	Annual number of engine tests
TIME	ABPTIV	Yes	14,15	Test time in each mode
TMPDIF	ABPTIV	No	18	Daily average temperature variation of fuel vapor space
TNKCAP	EVAPHC	No	23,24	Tank capacity
TTARFR	ACEMIV	Yes	8	Inbound taxiway usage
TTDPFR	ACEMIV	Yes	8	Outbound taxipath usage
TTMP	ABPTIV	No	18	Temperature of fuel in tank
VM	VEHIC	Yes	28,29, 31,32, 35,36	Vehicle miles for vehicles
WSBAR	SRCINV	No	3	Annual average wind speed
XMIGAL	ABARIV	No	27	Diesel fuel consumption rate
YRUSE	EVAPHC	Yes	21	Amount of fuel processed

SHORT-TERM INPUT VARIABLES

ORDERED BY DATA SET

Data set	Variable name	Subroutine overlay	Array	Definition
1	ITITLE	LETTER	Yes	Block title information
2	TITLE1	AQAMST	Yes	Description of the problem
2	NXPOL	AQAMST	No	Extra pollutant indicator
2	XNAME	AQAMST	No	Name of extra pollutant
2	IPCHOS	AQAMST	Yes	Pollutant identification number
2	NCASE	AQAMST	No	Number of special wind cases
2	WDSP	AQAMST	Yes	Special case wind directions (degree)
2	WSSP	AQAMST	Yes	Special case wind speeds (knots)
2	XBASE	AQAMST	No	X coordinate of grid (km)
2	YBASE	AQAMST	No	Y coordinate of grid (km)
2	INCRX	AQAMST	No	Number of columns in grid
2	INCRY	AQAMST	No	Number of rows in grid
2	DELTA	AQAMST	No	Spacing between rows and columns (km)
2	IADD	AQAMST	No	Number of special receptors
2	XRECEP	AQAMST	No	X coordinate of special receptor (km)
2	YRECEP	AQAMST	No	Y coordinate of special receptor (km)
2	NRSTAT	AQAMST	No	Number of statistical receptors defined
2	NSTAPE	AQAMST	No	Logical unit for statistical tape
2	NEWOLD	AQAMST	No	Indicator of old or new statistical tape
2	XSTARP	AQAMST	No	X coordinate of statistical receptor
2	YSTARP	AQAMST	No	Y coordinate of statistical receptor
2	IMONTH	MAINS	No	Identification of month to be modeled
2	NODAYS	MAINS	No	Number of days in the month
2	NPER	MAINS	No	Number of periods to be modeled
2	TMBAR	MAINS	No	Average temperature in this month (°F)
3	NHOUR	MAINS	No	Number of hours in this period
3	IDAY	MAINS	No	Weekday/weekend indicator
4	KRH	MAINS	Yes	Identification of the hour
4	JSTABB	MAINS	Yes	Stability identification
4	WSS	MAINS	Yes	Average wind speed (meter/sec)
4	WDD	MAINS	Yes	Average wind direction (degree)
4	TEMPP	MAINS	Yes	Average ambient temperatuer (°F)
4	HLIDD	MAINS	Yes	Average mixing depth (meter)

Data set	Variable name	Subroutine overlay	Array	Definition
5	JFLAG	SOURCE	No	Temporal distribution indicator
6	ICLASS	METHC	No	Site indicator
6	FH	METHC	No	Hourly activity (fraction)
6	FD	METHC	No	Daily activity (fraction)
6	FM	METHA	No	Number of sites not using uniform distribution
6	SID	METHA	No	Identifier of site to be assigned activity
7	IOPT	ABARAR	No	Option indicator for temporal activity of hydrocarbon sources
7	UNIFRC	METHB	No	Portion of total emissions using uniform temporal distribution (fraction)
8	IMETH	METHB	No	Option indicator for temporal activity
9	---	ENARAY	---	No new variable defined
10	---	ENARAY	---	No new variable defined
11	---	ENARAY	---	No new variable defined

SHORT-TERM INPUT VARIABLES

ORDERED ALPHABETICALLY

Variable name	Subroutine overlay	Array	Data set	Definition
DELTA	AQAMST	No	2	Spacing between rows and columns
FD	METHC	No	6-11	Daily activity
FH	METHC	No	6-11	Hourly activity
FM	METHC	No	6-11	Monthly activity
HLIDD	MAINS	Yes	4	Average mixing depth
IADD	AQAMST	No	2	Number of special receptors
ICLASS	METHC	No	6-11	Site indicator
IDAY	MAINS	No	3	Weekday/weekend indicator
IMETH	ABLNAR	No	8,9	Option indicator for temporal activity
IMONTH	MAINS	No	2	Identification of month to be modeled
INCRX	AQAMST	No	2	Number of columns in grid
INCRY	AQAMST	No	2	Number of rows in grid
IOPT	APARAR	No	7	Option indicator of temporal activity of hydrocarbon sources
IPCHOS	AQAMST	Yes	2	Pollutant identification number
ITITLE	INTRO	Yes	1	Block title information
JFLAG	SOURCE	No	5	Temporal distribution indicator
JSTABB	MAINS	Yes	4	Stability identification
KRH	MAINS	Yes	4	Identification of the hour
NCASE	AQAMST	No	2	Number of special wind cases
NEWOLD	AQAMST	No	2	Indicator of new or old statistical tape
NHOUR	MAINS	No	3	Number of hours in this period
NODAYS	MAINS	No	2	Number of days in the month
NPER	MAINS	No	2	Number of periods to be modeled
NPTC	METHA	No	6-11	Number of sites not using uniform distribution
NRSTAT	AQAMST	No	2	Number of statistical receptors defined
NSTAPE	AQAMST	No	2	Logical unit for statistical tape
NXPOL	AQAMST	No	2	Extra pollutant indicator
SID	METHA	No	6-11	Identifier of site to be assigned activity
TEMPP	MAINS	Yes	4	Average ambient temperature (°F)
TITLE1	AQAMST	Yes	2	Description of the problem
TMBAR	MAINS	No	2	Average temperature of this month (°F)

Variable name	Subroutine overlay	Array	Data set	Description
UNIFRC	METHB	No	7	Portion of total emissions using uniform temporal distribution
WDD	MAINS	Yes	4	Average wind direction
WDSP	AQAMST	Yes	2	Special case wind directions
WSS	MAINS	Yes	4	Average wind speed
WSSP	AQAMST	Yes	2	Special case wind speeds
XBASE	AQAMST	No	2	X coordinate of grid
XNAME	AQAMST	No	2	Name of extra pollutant
XRECEP	AQAMST	No	2	Number of special receptors
XSTARP	AQAMST	No	2	X coordinate of statistical receptor
YBASE	AQAMST	No	2	Y coordinate of grid
YRECEP	AQAMST	No	2	Y coordinate of special receptor
YSTARP	AQAMST	No	2	Y coordinate of statistical receptor

LONG-TERM INPUT VARIABLES

ORDERED BY DATA SET

Data set	Variable name	Subroutine overlay	Array	Definition
1	ITITLE	LETTER	Yes	Block title information
2	TITLE1	AQAMLT	Yes	Description of the problem
2	IRPR	AQAMLT	No	Identifier of period at which to stop
2	IRMN	AQAMLT	No	Identifier of month at which to restart
2	IRWS	AQAMLT	No	Identifier of wind speed at which to restart
2	IRWD	AQAMLT	No	Identifier of wind direction at which to restart
2	NXPOL	AQAMLT	No	Extra pollutant indicator
2	XNAME	AQAMLT	No	Name of extra pollutant
2	IPCHOS	AQAMLT	Yes	Pollutant identification number
2	NCASE	AQAMLT	No	Number of special wind cases
2	WDSP	AQAMLT	Yes	Special case wind direction (degree)
2	WSSP	AQAMLT	Yes	Special case wind speed
2	XBASE	AQAMLT	No	X coordinate of grid (km)
2	YBASE	AQAMLT	No	Y coordinate of grid (km)
2	INCRX	AQAMLT	No	Number of columns in grid
2	INCRY	AQAMLT	No	Number of rows in grid
2	DELTA	AQAMLT	No	Spacing between rows and columns (km)
2	IADD	AQAMLT	No	Number of special receptors
2	XRECEP	AQAMLT	No	X coordinate of special receptors
2	YRECEP	AQAMLT	No	Y coordinate of special receptors
2	NRSTAT	AQAMLT	No	Number of statistical receptors defined
2	NSTAPE	AQAMLT	No	Logical unit for statistical tape
2	XSTARP	AQAMLT	No	X coordinate of statistical receptors (km)
2	YSTARP	AQAMLT	No	Y coordinate of statistical receptors (km)
3	IDAY	MAINL	No	Weekday/weekend indicator
3	IPR	MAINL	Yes	Indicator for period of day to be modeled
3	IMN	MAINL	Yes	Indicator for months to be modeled
4	JFLAG	SOURCE	No	Temporal distribution indicator
5	ICLASS	METHC	No	Site indicator
5	FH	METHC	No	Hourly activity (fraction)

Data set	Variable name	Subroutine overlay	Array	Definition
5	FD	METHC	No	Daily activity (fraction)
5	FM	METHC	No	Monthly activity (fraction)
5	NPTC	METHA	No	Number of sites not using uniform distribution
5	SID	METHA	No	Identifier of site to be assigned activity
6	IOPT	ABARAR	No	Option indicator for temporal activity of hydrocarbon source
6	UNIFRC	METHB	No	Portions of total emissions using uniform temporal distribution (fraction)
7	IMETH	ABLNAR	No	Option indicator for temporal activity
8	---	ENARAY	---	No new variable defined
9	---	ENARAY	---	No new variable defined
10	---	ENARAY	---	No new variable defined

LONG-TERM INPUT VARIABLES

ORDERED ALPHABETICALLY

Variable name	Subroutine overlay	Array	Data set	Definition
DELTA	AQAMLT	No	2	Spacing between rows and columns
FD	METHC	No	5,6-10	Daily activity
FH	METHC	No	5,6-10	Hourly activity
FM	METHC	No	5,6-10	Monthly activity
IADP	AQAMST	No	2	Number of special receptors
ICLASS	METHC	No	5-10	Site indicator
IDAY	MAINL	No	3	Weekday/weekend indicator
IMETH	ABLNAR	No	7,8	Option indicator for temporal activity
IMN	MAINL	Yes	3	Indicator for months to be modeled
INCRX	AQAMLT	No	2	Number of columns in grid
INCRY	AQAMLT	No	2	Number of rows in grid
IOPT	ABARAR	No	6	Option indicator for temporal activity of hydrocarbon sources
IPCHOS	AQAMLT	Yes	2	Pollutant identification number
IPR	MAINL	Yes	3	Indicator for period of day to be modeled
IRMN	AQAMLT	No	2	Identifier of month at which to restart
IRPR	AQAMLT	No	2	Identifier of period at which to restart
IRWD	AQAMLT	No	2	Identifier of wind direction at which to restart
IRWS	AQAMLT	No	2	Identifier of wind speed at which to restart
ITITLE	INTRO	Yes	1	Block title information
JFLAG	SOURCE	No	4	Temporal distribution indicator
NCASE	AQAMLT	No	2	Number of special wind cases
NEWOLD	AQAMLT	No	2	Indicator of new/old statistical tapes
NPTC	METHA	No	5-10	Number of sites not using uniform distribution
NRSTAT	AQAMLT	No	2	Number of statistical receptors defined
NSTAPE	AQAMLT	No	2	Logical unit for statistical tape
NXPOL	AQAMLT	No	2	Extra pollutant indicator
SID	METHA	No	5-10	Identifier of site to be assigned activity
TITLE1	AQAMLT	Yes	2	Description of the problem
UNIFRC	METHB	No	6	Portion of total emission using uniform temporal distribution

Variable name	Subroutine overlay	Array	Data set	Definition
WDSP	AQAMLT	Yes	2	Special case wind directions
WSSP	AQAMLT	Yes	2	Special case wind speed
XBASE	AQAMLT	No	2	X coordinate of grid
XNAME	AQAMLT	No	2	Name of extra pollutant
XRECEP	AQAMST	No	2	X coordinate of special receptor
XSTARP	AQAMST	No	2	X coordinate of statistical receptor
YBASE	AQAMLT	No	2	Y coordinate of grid
YRECEP	AQAMST	No	2	Y coordinate of special receptor
YSTARP	AQAMST	No	2	Y coordinate of statistical receptor

APPENDIX H

STRUCTURE OF THE METEOROLOGICAL DATA TAPE

Climatological data are provided to the AQAM long-term model via a meteorological data tape. This tape is created by a computer program operated at the USAF Environmental Technical Applications Center (ETAC) at Scott AFB, Illinois. The climatological data written on the tape are a statistical representation of at least 5 years of meteorological measurements and the physical and logical structure of the tapes is such that the data can be directly read by the AQAM long-term model. Tables H1 and H2 illustrate this data structure.

Generally, a complete data tape contains 17,564 Binary Coded Decimal (BCD) records (80 characters per record). The first record (arrow number 1, table H2) identifies the location with the Weather Bureau Army Navy (WBAN) station locator and defines the number of stability classes to be found on the tape. These data can be read from the tape utilizing the FORTRAN format (25X, I5, 4X, I2). The next record (arrow number 2, table H2) identifies the monthly data section, the time, and various related meteorological parameters. A description of each of the parameters and the format for reading this record is included in table H3. Each monthly data section is made up of 16 wind rose and 16 mixing depth data records (braces numbered 3 and 4, table H2). The wind rose and mixing depth data can be read with format (6F10.6, A6, A2, A4). Each of the 16 wind rose data records (braces numbered 3, table H2) indicate frequency of occurrence of a specific wind direction and wind speed class (see table H4). The wind direction is given as the seventh word of each data record. The six wind speed classes correspond to the first six words of each data record. For example, the initial word in all of the wind rose records defines the frequency of occurrence of wind from the north which falls within wind speed class one. The second word corresponds to speed class two, etc., to word six. Similarly, the 16 mixing depth data records contain the average mixing depth in meters as a function of wind direction and wind speed class. The mixing depth data are calculated using equations developed by K. Noyaki (ref. 1). A zero indicates a missing datum.

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1. Mixing Depth Model Using Hourly Surface Observations, TCAC Report 1053, November 1973.

Wind rose and mixing depth data are listed as a pair and repeated on the tape for each of the six stability classes (see table 17). The monthly data section identifier (arrow number 2, table H2) is included with the wind rose and mixing depth data and this group is repeated for seven time-of-day periods within each of 13 months.

Generally, the data tapes are properly constructed with accurate and reliable data. However, in some instances, inaccuracies have been discovered. To provide a method to quickly and efficiently verify the accuracy of the meteorological tapes, a test algorithm has been developed. This algorithm is written in the FORTRAN computer language and is designed to read the information on the tape and calculate statistical parameters based on these data. Successful completion of the test algorithm indicates that the tape's physical structure is correct. The calculated statistical parameters can be analyzed to verify the accuracy of the data.

To ensure proper evaluation and to avoid unnecessary rejection of accurate data, an analysis of the statistical results of the test program should be directed by a qualified meteorologist. The test algorithm is included on the following pages.

```
      DIMENSION WNDF(6,16,6),DEP(6,16,6),FDIR(4),FSPD(6),FSTAB(6),FR(6),
     1DMWS(6),FRE(6),DMST(6)
C READ INITIAL TAPE HEADER CARD
      READ (10,100) IDUM
100   FORMAT (1X,A2)
C SEQUENCE THROUGH TIME/PERIODS
      DO 1 I=1,7
C SEQUENCE THROUGH MONTHS
      DO 1 J=1,13
C READ SECTION HEADER CARD
      READ (10,100) IDUM
C SEQUENCE THROUGH STABILITIES
      DO 2 L=1,6
C SEQUENCE THROUGH WIND DIRECTION
      DO 3 M=1,16
C READ A WIND FREQUENCY CARD IMAGE
3     READ (10,101) (WNDF(L,M,N),N=1,6)
101   FORMAT (6F10.0)
C SEQUENCE THROUGH WIND DIRECTION
      DO 4 M=1,16
C READ A MIXING DEPTH CARD IMAGE
4     READ (10,101) (DEP(L,M,N),N=1,6)
2     CONTINUE
C INITIALIZE ARRAYS
      DO 11 N=1,4
11    FDIR(N)=0.0
      DO 12 N=1,6
      FSPD(N)=0.0
12    FSTAB(N)=0.0
      DEPM=0.0
      PRINT 111
111   FORMAT (1H )
C TASK 1, CALCULATE WIND DIRECTION FREQUENCY FOR MONTH/PERIOD OF DAY
      PRINT 103,I,J
103   FORMAT (1X,*WIND DIRECTION FREQUENCY NE-SE-SW-NW  TIME OF DAY PER
     1IOD=*,I2,* MONTH=*,I2)
      DO 5 L=1,6
      DO 5 N=1,6
C CALCULATE NE FREQUENCY
      FDIR(1)=FDIR(1)+WNDF(L,1,N)*.5+WNDF(L,2,N)+WNDF(L,3,N)+WNDF(L,4,N)
     1+WNDF(L,5,N)*.5
C CALCULATE SE FREQUENCY
      FDIR(2)=FDIR(2)+WNDF(L,5,N)*.5+WNDF(L,6,N)+WNDF(L,7,N)+WNDF(L,8,N)
     1+WNDF(L,9,N)*.5
C CALCULATE SW FREQUENCY
      FDIR(3)=FDIR(3)+WNDF(L,9,N)*.5+WNDF(L,10,N)+WNDF(L,11,N)+WNDF(L,12
     1,N)+WNDF(L,13,N)*.5
C CALCULATE NW FREQUENCY
5     FDIR(4)=FDIR(4)+WNDF(L,13,N)*.5+WNDF(L,14,N)+WNDF(L,15,N)+WNDF(L,1
     16,N)+WNDF(L,1,N)*.5
      PRINT 104,(FDIR(L),L=1,4)
104   FORMAT (1X,6(F10.6))
C TASK 2, CALCULATE WIND SPEED CLASS FREQUENCY FOR MONTH/PERIOD OF DAY
      PRINT 105,I,J
```

```
105   FORMAT (1X,*WIND SPEED FREQUENCY CLASSES 1-6   TIME OF DAY PERIOD=
     1*,I2,* MONTH=*,I2)
C SEQUENCE THROUGH STABILITY, WIND DIRECTION, AND WIND SPEED
      DO 6 L=1,6
      DO 6 M=1,16
      DO 6 N=1,6
6     FSPD(N)=FSPD(N)+WNDF(L,M,N)
      PRINT 104,(FSPD(N),N=1,6)
C TASK 3, CALCULATE STABILITY CLASS FREQUENCY FOR MONTH/PERIOD OF DAY
      PRINT 106,I,J
106   FORMAT (1X,*STABILITY FREQUENCY CLASSES 1-6   TIME OF DAY PERIOD=*
     1,I2,* MONTH=*,I2)
C SEQUENCE THROUGH STABILITY, WIND DIRECTION, AND WIND SPEED
      DO 7 L=1,6
      DO 7 M=1,16
      DO 7 N=1,6
7     FSTAB(L)=FSTAB(L)+WNDF(L,M,N)
      PRINT 104,(FSTAB(L),L=1,6)
C TASK 4, CALCULATE MEAN MIXING FOR MONTH/PERIOD OF DAY
      PRINT 107,I,J
107   FORMAT (1X,*MEAN MIXING DEPTH (M)   TIME OF DAY PERIOD=*,I2,* MONT
     1H=*,I2)
C SEQUENCE THROUGH STABILITY, WIND DIRECTION, AND WIND SPEED
      DO 8 L=1,6
      DO 8 M=1,16
      DO 8 N=1,6
C WEIGHT MIXING DEPTH BY WIND FREQUENCY
8     DEPM=DEPM+DEP(L,M,N)*WNDF(L,M,N)
      PRINT 108,DEPM
108   FORMAT (1X,6(F6.1))
C TASK 5, CALCULATE ANNUAL (FULL DAY) MIXING DEPTHS AS FUNCTION OF WIND SPEED
C AND STABILITY
      IF (J.NE.13.OR.I.NE.1) GO TO 1
      PRINT 109,I,J
109   FORMAT (1X,*MEAN MIXING DEPTH AS FUNCTION OF WIND SPEED   TIME OF
     1DAY PERIOD=*,I2,* MONTH=*,I2)
C SEQUENCE THROUGH STABILITY, WIND DIRECTION, AND WIND SPEED
      DO 9 L=1,6
      DO 9 M=1,16
      DO 9 N=1,6
      FR(N)=FR(N)+WNDF(L,M,N)
C WEIGHT MIXING DEPTH BY WIND FREQUENCY
      DMWS(N)=DMWS(N)+DEP(L,M,N)*WNDF(L,M,N)
      FRE(L)=FRF(L)+WNDF(L,M,N)
C WEIGHT MIXING DEPTH BY STABILITY FREQUENCY
9     DMST(L)=DMST(L)+DEP(L,M,N)*WNDF(L,M,N)
      DO 10 N=1,6
      DMWS(N)=DMWS(N)/FR(N)
10    DMST(N)=DMST(N)/FRE(N)
      PRINT 108,(DMWS(N),N=1,6)
      PRINT 110,I,J
110   FORMAT (1X,*MEAN MIXING DEPTH AS FUNCTION OF STABILITY   TIME OF D
     1AY PERIOD=*,I2,* MONTH=*,I2)
      PRINT 108,(DMST(N),N=1,6)
1     CONTINUE
      STOP
```

Table H1

GENERAL TAPE STRUCTURE

Repeated for seven time-of-day periods for each of 13 months (17,564 records)

- Station Locator (WBAN) (1 record)
- Time Identification and Related Statistics (1 record)
- Repeated for six stability classes (192 records)
  - Wind Rose Frequency Data (16 records)
  - Mixing depth data (16 records)

Table H2

FORMAT OF METEOROLOGICAL DATA TAPE

1 STATION PROCESSED IS 13840 STABILITY CLASSES							
0001010024 30.2 13.9 1077.9 908.5 681.7 4.4 89.0							
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	NNE A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	NE A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	ENE A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	E A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	ESE A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	SE A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	SSE A JAN	No. 3
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	S A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	SSW A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	SW A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	WSW A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	W A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	WNW A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	NW A JAN	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	NNW A JAN	
0.	0.	0.	0.	0.	0.	N A JAN	
0.	0.	0.	0.	0.	0.	NNE A JAN	
0.	0.	0.	0.	0.	0.	NE A JAN	
0.	0.	0.	0.	0.	0.	ENE A JAN	
0.	0.	0.	0.	0.	0.	E A JAN	
0.	0.	0.	0.	0.	0.	ESE A JAN	
0.	0.	0.	0.	0.	0.	SE A JAN	
0.	0.	0.	0.	0.	0.	SSE A JAN	No. 4
0.	0.	0.	0.	0.	0.	S A JAN	
0.	0.	0.	0.	0.	0.	SSW A JAN	
0.	0.	0.	0.	0.	0.	SW A JAN	
0.	0.	0.	0.	0.	0.	WSW A JAN	
0.	0.	0.	0.	0.	0.	W A JAN	
0.	0.	0.	0.	0.	0.	WNW A JAN	
0.	0.	0.	0.	0.	0.	NW A JAN	
0.	0.	0.	0.	0.	0.	NNW A JAN	
0.001296	0.000000	0.000000	0.000000	0.000000	0.000000	N B JAN	
0.000259	0.000000	0.000000	0.000000	0.000000	0.000000	NNE B JAN	
0.000517	0.000000	0.000000	0.000000	0.000000	0.000000	NE B JAN	
0.000517	0.000000	0.000000	0.000000	0.000000	0.000000	ENE B JAN	
0.000259	0.000000	0.000000	0.000000	0.000000	0.000000	E B JAN	
0.000600	0.000000	0.000000	0.000000	0.000000	0.000000	ESE B JAN	
0.000776	0.000000	0.000000	0.000000	0.000000	0.000000	SE B JAN	
0.001296	0.000000	0.000000	0.000000	0.000000	0.000000	SSE B JAN	No. 3
0.001064	0.000000	0.000000	0.000000	0.000000	0.000000	S B JAN	
0.002627	0.000000	0.000000	0.000000	0.000000	0.000000	SSW B JAN	
0.001034	0.000000	0.000000	0.000000	0.000000	0.000000	SW B JAN	
0.000776	0.000000	0.000000	0.000000	0.000000	0.000000	WSW B JAN	
0.001551	0.000000	0.000000	0.000000	0.000000	0.000000	W B JAN	
0.000517	0.000000	0.000000	0.000000	0.000000	0.000000	WNW B JAN	
0.001034	0.000000	0.000000	0.000000	0.000000	0.000000	NW B JAN	
0.000776	0.000000	0.000000	0.000000	0.000000	0.000000	NNW B JAN	
464.	0.	0.	0.	0.	0.	N B JAN	
421.	0.	0.	0.	0.	0.	NNE B JAN	
680.	0.	0.	0.	0.	0.	NE B JAN	
441.	0.	0.	0.	0.	0.	ENE B JAN	
449.	0.	0.	0.	0.	0.	E B JAN	
0.	0.	0.	0.	0.	0.	ESE B JAN	No. 4
440.	0.	0.	0.	0.	0.	SE B JAN	
480.	0.	0.	0.	0.	0.	SSE B JAN	
460.	0.	0.	0.	0.	0.	S B JAN	
416.	0.	0.	0.	0.	0.	SSW B JAN	
464.	0.	0.	0.	0.	0.	SW B JAN	
472.	0.	0.	0.	0.	0.	WSW B JAN	

No. 1
No. 2

Table H3

SECTION IDENTIFIER

Item	Format	Columns
Section number	I4	1 - 4
Month (by number)	I2	5 - 6
Start time (LST)	I2	7 - 8
Stop time (LST)	I2	9 - 10
Mean temperature (°F)	F6.1	11 - 16
Mean temperature range (°F)	F6.1	17 - 22
Mean heating degree days (base 65°F)	F10.1	23 - 32
Mean station pressure (mb)	F10.1	33 - 42
Mean pressure altitude (feet)	F10.1	43 - 52
Mean surface wind speed (meter/sec)	F10.1	53 - 62
Percent of time the prime runway is potentially active	F10.1	63 - 72

Table H4

Wind speed class	Wind speed (knots)
1	0 - 3
2	4 - 7
3	8 - 12
4	13 - 18
5	19 - 24
6	Greater than 24

ABBREVIATIONS AND SYMBOLS

CO	Carbon monoxide
CP	Central processor
deg	Degrees
F	Fahrenheit
ft	Feet
gal	Gallons
HC	Hydrocarbon
hr	Hour
ID	Identification
kl	Kiloliters
kg	Kilograms
km	Kilometers
l	Liters
LT	Long-term
LTO	Landing and takeoff
lb	Pounds
m	Meters
mi	Miles
min	Minutes
NOX	Nitrogen oxide
PM	Particulate matter
sec	Second
SI	Source inventory
SOX	Sulfur oxide
ST	Short-term
yr	Year
°F	Degrees Fahrenheit
°K	Degrees Kelvin

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